STIC-Biotech/ChemLib 7/25 99

From: Chan, Christina
Sent: Tuesday, August 06, 2002 12:40 PM
To: Minnifield, Nita; STIC-Biotech/ChemLib
Subject: RE: rush sequence search

Please rush. Thanks Chris

-----Original Message-----
From: Minnifield, Nita
Sent: Tuesday, August 06, 2002 12:16 PM
To: Chan, Christina
Subject: rush sequence search

Christina,
2 month amdt. due, please approve.

thanks, Nita

Point of Contact:
Toby Port
Technical Info. Specialist
CM1 6A04
703-308-3534

STIC

09/635679

Please do a commercial and interference sequence search on SEQ ID NO: 3 of this application.

Please provide paper copy of results.

Reviewed 8/02

Thanks,
Nita M. Minnifield
Art Unit 1645
Office CM1-8A07
Mailbox CM1-8E12
703-305-3394

Searcher: _____
Phone: _____
Location: _____
Date Picked Up: 8/7
Date Completed: 8/7
Searcher Prep/Review: _____
Clerical: _____
Online time: _____

TYPE OF SEARCH:
NA Sequences: _____
AA Sequences: _____
Structures: _____
Bibliographic: _____
Litigation: _____
Full text: _____
Patent Family: _____
Other: _____

VENDOR/COST (where applic.)
STN: _____
DIALOG: _____
Questel/Orbit: _____
DRLink: _____
Lexis/Nexis: _____
Sequence Sys.: _____
WWW/Internet: _____
Other (specify): _____

GenCore version 4.5

OM protein - protein search, using sw model

Run on: August 7, 2002, 09:14:41 ; Search time 29.89 Seconds
(without alignments)
111.483 Million cell updates/sec

Title: US-09-635-679C-3
Perfect score: 155
Sequence: 1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 747574 seqs, 111073796 residues

Total number of hits satisfying chosen parameters: 747574

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : A_Geneseq_032802:*
1: /SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1980.DAT:*
2: /SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1981.DAT:*
3: /SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1982.DAT:*
4: /SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1983.DAT:*
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10: /SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1989.DAT:*
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21: /SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA2000.DAT:*
22: /SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA2001.DAT:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	153	98.7	30	15	AAR45435	Insulinotropin der
2	153	98.7	30	15	AAR63247	Insulinotropin (GL
3	153	98.7	30	16	AAR69063	Amidated Glucagon
4	153	98.7	30	16	AAR79809	Glucagon like pept
5	153	98.7	30	16	AAR80548	Human glucagon lik
6	153	98.7	30	17	AAR98956	Target peptide (GL
7	153	98.7	30	17	AAR98975	GLP1(7-35)-NH2. S
8	153	98.7	30	18	AAW16383	Glucagon-like pept
9	153	98.7	30	19	AAW63288	Glucagon-like pept
10	153	98.7	30	19	AAW63182	GLP-1(7-36). Homo
11	153	98.7	30	19	AAW50906	Glucagon-like pept
12	153	98.7	30	20	AAY42935	Glucagon-like pept
13	153	98.7	30	20	AAY27374	Glucagon-like pept
14	153	98.7	30	20	AAY39773	Glucagon like pept
15	153	98.7	30	20	AAY34198	GLP-1 mutant pepti
16	153	98.7	30	20	AAY31503	Glucagon-like pept
17	153	98.7	30	20	AAY22166	GLP-1-like peptide
18	153	98.7	30	20	AAY03719	Amino acid sequenc
19	153	98.7	30	21	AAB11283	GLP-1 peptide SEQ
20	153	98.7	30	21	AAB21340	GLP-1 peptide GLP-
21	153	98.7	30	21	AAB21108	Human glucagon-lik
22	153	98.7	30	21	AAB07294	Modified Glucagon
23	153	98.7	30	21	AAB07313	Modified Glucagon
24	153	98.7	30	21	AAB07314	Modified Glucagon
25	153	98.7	30	21	AAY53280	Glucagon-like pept
26	153	98.7	30	21	AAY78949	Glucagon-like pept
27	153	98.7	30	22	AAU07375	Mammalian glucagon
28	153	98.7	30	22	AAE09260	Human glucagon-lik
29	153	98.7	30	22	AAG63303	An insoluble gluca
30	153	98.7	30	22	AAB82336	Glucagon-like pept
31	153	98.7	30	22	AAB83291	GLP-1 peptide #2.
32	153	98.7	30	22	AAG70461	GLP-1. Unidentifi
33	153	98.7	30	22	AAB91170	Pancreatic hormone
34	153	98.7	30	22	AAB91181	Pancreatic hormone
35	153	98.7	30	22	AAB60124	Human glucagon-lik
36	153	98.7	30	22	AAB60249	Glucagon-like pept
37	153	98.7	30	22	AAB36416	Glucagon-like pept
38	153	98.7	30	22	AAB36429	Glucagon-like pept
39	153	98.7	30	22	AAB85922	Glucagon-like pept
40	153	98.7	31	8	AAP71072	Insulinotropic pep
41	153	98.7	31	11	AAR07397	Glucagon-like pept
42	153	98.7	31	12	AAR13420	Glucagon-like pept
43	153	98.7	31	12	AAR13422	Glucagon-like pept
44	153	98.7	31	12	AAR13423	Glucagon-like pept
45	153	98.7	31	14	AAR42668	Glucagon-like pept

ALIGNMENTS

RESULT 1
AAR45435
ID AAR45435 standard; protein; 30 AA.
XX
AC AAR45435;
XX
DT 27-JUN-1994 (first entry)
XX
DE Insulinotropin derivative.
XX
KW Insulinotropic; activity; enhancing insulin activity; treatment;
KW Type II diabetes.
XX
OS Synthetic.
XX
PN WO9325579-A.
XX
PD 23-DEC-1993.
XX
PF 14-APR-1993; 93WO-US03388.
XX
PR 15-JUN-1992; 92US-0899073.
XX
PA (PFIZ) PFIZER INC.
XX
PI Andrews GC, Daumy GO, Francoeur ML, Larson ER;
XX
DR WPI; 1994-007457/01.
XX
PT New derivs. of glucagon-like peptide 1 and insulinotropin - used for
PT enhancing insulin action in a mammal, partic. by iontophoretic admin.
XX
PS Claim 3; Page 20; 32pp; English.
XX

```
CC   The sequence is that of a derivative of insulinotropin which
CC   has insulinotropic activity and is useful for enhancing insulin
CC   action in a mammal, partic. for treating Type II diabetes
CC   (claimed). It is partic. suited for delivery to a mammal by
CC   ionophoresis.
XX
SQ   Sequence   30 AA;

  Query Match             98.7%;  Score 153;  DB 15;  Length 30;
  Best Local Similarity   96.7%;  Pred. No. 5e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           ||||||||||||||||||||||:|||||||
Db       1 haegtftsdvssylegqaakefiawlvkgr 30


RESULT   2
AAR63247
ID   AAR63247 standard; peptide; 30 AA.
XX
AC   AAR63247;
XX
DT   02-MAY-1995  (first entry)
XX
DE   Insulinotropin (GLP-1(7-36)) for use in treating NIDDM.
XX
KW   insulinotropic activity; GLP-1; glucagon-like protein 1; NIDDM;
KW   non-insulin dependent diabetes mellitus; insulintropin; truncated.
XX
OS   Synthetic.
XX
PN   EP619322-A.
XX
PD   12-OCT-1994.
XX
PF   10-FEB-1994;   94EP-0300981.
XX
PR   07-APR-1993;   93US-0044133.
XX
PA   (PFIZ ) PFIZER INC.
PA   (PFIZ ) PFIZER CORP.
XX
PI   Danley DE,  Gelfand RA,  Geoghegan KF,  Kim Y,  Lambert WJ;
PI   Qi H,  Oih,  Hong Q,  Yesook K;
XX
DR   WPI; 1994-311774/39.
XX
PT   Treatment of non-insulin dependent diabetes mellitus - using a
PT   glucagon-like peptide 1 or deriv. with prolonged action for
PT   sustained glycaemic control
XX
PS   Claim 2; Page 46; 70pp; English.
XX
CC   This peptide is GLP-1(7-36) [GLP = glucagon-like peptide], a truncated
CC   deriv. of GLP-1. GLP-1 and its deriv.s are useful in the treatment of
CC   Non-Insulin Dependent Diabetes Mellitus (NIDDM). During processing in
CC   the pancreas and intestine, GLP-1 (AAR63245) is converted to a 31 amino
CC   acid peptide having amino acids 7-37 of GLP-1, alternatively referred
CC   to as insulinotropin. GLP-1(7-37) has insulinotropic activity, ie. it
CC   is able to stimulate, or cause to be stimulated, the synthesis of the
CC   hormone insulin. Other derivs. of GLP-1 are shown in AAR63246-51. It
CC   has been discovered that prolonged plasma elevations of GLP-1, and
CC   related polypeptides, are necessary during the meal and beyond to
CC   achieve sustained glycemic control in patients with NIDDM. The invention
CC   provides a compsn. that has prolonged action after each administration.
XX
SQ   Sequence   30 AA;

  Query Match             98.7%;  Score 153;  DB 15;  Length 30;
  Best Local Similarity   96.7%;  Pred. No. 5e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           ||||||||||||||||||||||:|||||||
Db       1 haegtftsdvssylegqaakefiawlvkgr 30


RESULT   3
AAR69063
ID   AAR69063 standard; peptide; 30 AA.
XX
AC   AAR69063;
XX
DT   23-AUG-1995  (first entry)
XX
DE   Amidated Glucagon like peptide 1 (GLP1) (7-36)-NH2.
XX
KW   Glucagon Like Peptide; GLP; transpeptidation; endopeptidase;
KW   trypsin; thrombin; cleavage.
XX
OS   Synthetic.
XX
FH   Key             Location/Qualifiers
FT   Modified-site   30
FT                   /label= Arg-NH2
XX
PN   WO9503405-A.
XX
PD   02-FEB-1995.
XX
PF   19-JUL-1994;   94WO-US08125.
XX
PR   20-JUL-1993;   93US-0095162.
XX
PA   (BION-) BIONEBRASKA INC.
XX
PI   Henriksen D,  Manning S,  Partridge B,  Stout J,  Wagner FW;
XX
DR   WPI; 1995-075233/10.
XX
PT   Transpeptidation of recombinant polypeptides - using
PT   endopeptidase such as trypsin or thrombin to modify C-terminal
PT   residue.
XX
PS   Claim 33; Page 50; 69pp; English.
XX
CC   The naturally occurring sequence of Glucagon Like Peptide 1 (GLP1)
CC   is AAR69072. It is a 36 AA peptide that has been recombinantly
CC   produced but without a mechanism for providing for the amidation of
CC   the C-terminal Arg residue. Amidated recombinant GLP1 (7-36)NH2
CC   (AAR69063) was prepd. from a multicopy fusion protein contg. four
CC   copies of a modified truncated GLP peptide having AA residues 7-34
CC   of the native polypeptide and the terminal AA residues A-F-A at
CC   residues 35-37 (GLP1 (7-34)-A-F-A) (AAR69064). The recombinant GLP1 (7-
CC   34)-A-F-A can be transpeptidated to yield the modified recombinant
CC   native GLP1 (7-36)-NH2 (AAR69063) as follows. Trypsin was used to
CC   cleave the peptide at the Lys-Ala bond in the presence of either
CC   Gly-Arg-NH2 or Gly-Arg-Gly addition units so that the cleavage of
CC   the Ala-Phe-Arg leaving unit is followed by the addition of
CC   Gly-Arg-NH2 or Gly-Arg-Gly to the core GLP1 (7-34) to yield either
CC    amidated 7-36 GLP1-NH2 or GLP1 7-36 with a terminal Gly (AAR69065).
XX
SQ   Sequence   30 AA;

  Query Match             98.7%;  Score 153;  DB 16;  Length 30;
  Best Local Similarity   96.7%;  Pred. No. 5e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

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           ||||||||||||||||||||||:|||||||
Db       1 haegtftsdvssylegqaakefiawlvkgr 30
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RESULT   4
AAR79809
ID   AAR79809 standard; peptide; 30 AA.
XX
AC   AAR79809;
XX
DT   01-FEB-1996  (first entry)
XX
DE   Glucagon like peptide GLP-1 (7-36)amide.
XX
KW   Glucagon like peptide; GLP-1 (7-36)amide; type II diabetes;
KW   non-insulin dependent; divalent metal cation; zinc.
XX
OS   Synthetic.
XX
FH   Key             Location/Qualifiers
FT   Modified-site   30
FT                   /note= "amidated"
XX
PN   EP658568-A1.
XX
PD   21-JUN-1995.
XX
PF   02-DEC-1994;   94EP-0308950.
XX
PR   09-DEC-1993;   93US-0164277.
XX
PA   (ELIL ) LILLY & CO ELI.
XX
PI   Galloway JA,  Hoffmann JA;
XX
DR   WPI; 1995-217011/29.
XX
PT   New divalent metal complexes of glucagon-like peptide 1 - useful for
PT   treating type II diabetes
XX
PS   Claim 4; Page 4; 10pp; English.
XX
CC   AAR79809 is the glucagon like peptide GLP-1 (7-36)amide. When
CC   complexed to a divalent metal cation (pref. zinc) it can be
CC   used to treat type II (non-insulin dependent) diabetes.
XX
SQ   Sequence   30 AA;


  Query Match           98.7%;  Score 153;  DB 16;  Length 30;
  Best Local Similarity  96.7%;  Pred. No. 5e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
          ||||||||||||||||||||||||:|||||||
Db      1 haegtftsdvssylegqaakefiawlvkgr 30


RESULT   5
AAR80548
ID   AAR80548 standard; peptide; 30 AA.
XX
AC   AAR80548;
XX
DT   28-FEB-1996  (first entry)
XX
DE   Human glucagon like peptide (GLP-1).
XX
KW   Exendin-4; diabetes mellitus; hyperglycaemia;
KW   insulinotropic peptide; glucagon like peptide; GLP-1.
XX
OS   Homo sapiens.
XX
PN   US5424286-A.
XX
PD   13-JUN-1995.
XX
PF   24-MAY-1993;   93US-0066480.
XX
PR   24-MAY-1993;   93US-0066480.
XX
PA   (ENGJ/) ENG J.
XX
PI   Eng J;
XX
DR   WPI; 1995-262627/34.
XX
PT   Stimulating/inhibiting insulin release with exendin polypeptide(s) -
PT   for treating diabetes mellitus and preventing hyperglycaemia.
XX
PS   Disclosure; Columns 5-6; 17pp; English.
XX
CC   AAR80548 is the human glucagon like peptide (GLP-1), to which the
CC   Heloderma horridum/suspectum exendin-3/-4 peptides are analogous.
CC   The exendin peptides are insulinotropic, and can therefore be used
CC   in the treatment of diabetes mellitus (types I or II), and for the
CC   prevention of hyperglycaemia.
XX
SQ   Sequence   30 AA;


  Query Match           98.7%;  Score 153;  DB 16;  Length 30;
  Best Local Similarity  96.7%;  Pred. No. 5e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

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          ||||||||||||||||||||||||:|||||||
Db      1 haegtftsdvssylegqaakefiawlvkgr 30


RESULT   6
AAR98956
ID   AAR98956 standard; peptide; 30 AA.
XX
AC   AAR98956;
XX
DT   15-JAN-1997  (first entry)
XX
DE   Target peptide (GLP1(7-36)) used in fusion protein construct.
XX
KW   Fusion protein construct; isolation; purification;
KW   growth hormone releasing factor, glucagon-like peptide 1,
KW   parathyroid hormone; inclusion body; carbonic anhydrase.
XX
OS   Synthetic.
XX
PN   WO9617942-A1.
XX
PD   13-JUN-1996.
XX
PF   07-DEC-1995;   95WO-US15800.
XX
PR   07-DEC-1994;   94US-0350530.
XX
PA   (BION-) BIONEBRASKA INC.
XX
PI   De LA MOTTE RS,  Henriksen DB,  Holmquist B,  Manning SD;
PI   Partridge BE, Stout JS,  Wagner FW;
XX
DR   WPI; 1996-287186/29.
XX
PT   Isolation and purificn of peptide(s) from fusion protein constructs
PT   - which include a carbonic anhydrase and a variable fused
PT   polypeptide
XX
PS   Claim 58; Page 50; 67pp; English.
XX
CC   A new method for the isolation and/or purification of a recombinant
CC   peptide employs a fusion protein construct (FPC) comprising a
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CC   carbonic anhydrase and a variable fused polypeptide containing a
CC   target peptide.  The method comprises precipitating either the FPC or
CC   a fragment of the FPC including the carbonic anhydrase.  An
CC   alternative method of producing the peptide comprises expressing the
CC   FPC as part of an inclusion body.  The target peptides of the FPC are
CC   derived from growth hormone releasing factor (GRF), glucagon-like
CC   peptide 1 (GLP1) or parathyroid hormone (PTH).  This sequence
CC   corresponds to amino acids 7-36 of GLP1.
XX
SQ   Sequence   30 AA;


  Query Match             98.7%;  Score 153;  DB 17;  Length 30;
  Best Local Similarity   96.7%;  Pred. No. 5e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

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           |||||||||||||||||||||||:|||||||
Db       1 haegtftsdvssylegqaakefiawlvkgr 30


RESULT   7
AAR98975
ID   AAR98975 standard; Peptide; 30 AA.
XX
AC   AAR98975;
XX
DT   03-DEC-1996  (first entry)
XX
DE   GLP1(7-35)-NH2.
XX
KW   GLP1; C-amide; C-amidated peptide; alpha-carboxamide;
KW   recombinant protein; fusion protein; transpeptidation.
XX
OS   Synthetic.
XX
FH   Key             Location/Qualifiers
FT   Modified-site   30
FT                   /note= "C-terminal amide"
XX
PN   WO9617941-A2.
XX
PD   13-JUN-1996.
XX
PF   07-DEC-1995;   95WO-US15799.
XX
PR   07-DEC-1994;   94US-0350528.
XX
PA   (BION-) BIONEBRASKA INC.
XX
PI   Heriksen DB,  Holmquist B,  Patridge BE,  Stout JS;
PI   Wagner FW;
XX
DR   WPI; 1996-287185/29.
XX
PT   Production of C-terminal alpha-carboxamidated peptide(s) - by
PT   cleavage and transpeptidation of recombinant multicopy peptide(s) or
PT   fusion constructs
XX
PS   Example 16; Page 69; 93pp; English.
XX
CC   Amidated recombinant GLP1(7-36)-NH2 (AAR98975) may be prepd. from
CC   a recombinant multicopy fusion peptide by cleavage, transamidation
CC   and photochemical rearrangement.  A DNA construct is formed by
CC   joining 4 copies of the coding sequence for GLP1(7-36)-Met
CC   (AAR98976) and a linker peptide including a thrombin cleavage site.
CC   Expression in E. coli, followed by thrombin and CNBr digestion yields
CC   GLP1(7-36)-Hse (AAR98977), which is subjected to transamidation and
CC   UV irradiation to yield GLP1(7-36)-NH2.  The amidated peptide may also
CC   be produced via GLP1(7-35)-Met (AAR98978) using a transpeptidation
CC   reaction.
XX
SQ   Sequence   30 AA;


  Query Match             98.7%;  Score 153;  DB 17;  Length 30;
  Best Local Similarity   96.7%;  Pred. No. 5e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

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           |||||||||||||||||||||||:|||||||
Db       1 haegtftsdvssylegqaakefiawlvkgr 30


RESULT   8
AAW16383
ID   AAW16383 standard; Peptide; 30 AA.
XX
AC   AAW16383;
XX
DT   01-OCT-1997  (first entry)
XX
DE   Glucagon-like peptide-1(7-36).
XX
KW   Glucagon-like peptide-1(7-36); GLP-1 (7-36); insulin secretagogue;
KW   insulinotropic hormone; type II diabetes mellitus; therapy.
XX
OS   Rattus sp.
XX
PN   US5614492-A.
XX
PD   25-MAR-1997.
XX
PF   05-MAY-1986;   86US-0859928.
XX
PR   05-SEP-1991;   91US-0756215.
PR   05-MAY-1986;   86US-0859928.
PR   26-JAN-1988;   88US-0148517.
PR   01-JUN-1990;   90US-0532111.
PR   23-NOV-1993;   93US-0156800.
XX
PA   (GEHO ) GEN HOSPITAL CORP.
XX
PI   Habener JF;
XX
DR   WPI; 1997-201513/18.
XX
PT   Glucagon-like peptide-1 fragment comprising amino acids 7-36 -
PT   useful for enhancing insulin production in pancreatic islet cells,
PT   especially for treating type II diabetes mellitus
XX
PS   Claim 1; Column 34; 37pp; English.
XX
CC   Glucagon-like peptide-1 (7-36) (AAW16383) comprises amino acid
CC   residues 7-36 of rat glucagon-like peptide-1 (GLP-1) (see also
CC   AAW16384).  It is naturally produced from GLP-1 in the intestine
CC   and to a lesser extent in the pancreas.  GLP-1(7-36) has
CC   insulinotropic activity, being able to stimulate the synthesis
CC   and secretion of insulin from the pancreas.  It can be produced
CC   by chemical synthesis or by proteolytic digestion of GLP-1 for use
CC   as an insulin secretagogue or for the treatment of type II diabetes
CC   mellitus.
XX
SQ   Sequence   30 AA;


  Query Match             98.7%;  Score 153;  DB 18;  Length 30;
  Best Local Similarity   96.7%;  Pred. No. 5e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           |||||||||||||||||||||||:|||||||
Db       1 haegtftsdvssylegqaakefiawlvkgr 30


RESULT   9
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```
AAW63288
ID   AAW63288 standard; peptide; 30 AA.
XX
AC   AAW63288;
XX
DT   29-SEP-1998  (first entry)
XX
DE   Glucagon-like peptide-1 (7-36) amide.
XX
KW   GLP-1; glucagon-like peptide; obesity.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Modified-site   30
FT                   /note= "C-terminal amide"
XX
PN   WO9819698-A1.
XX
PD   14-MAY-1998.
XX
PF   04-NOV-1997;    97WO-US20114.
XX
PR   30-OCT-1997;    97US-0961405.
PR   05-NOV-1996;    96US-0030213.
XX
PA   (ELIL ) LILLY & CO ELI.
XX
PI   DiMarchi RD,  Efendic S;
XX
DR   WPI; 1998-286595/25.
XX
PT   Use of glucagon-like peptide-1 and analogues and derivatives - to
PT   reduce body weight, e.g., in treatment of obesity
XX
PS   Claim 12; Page 18; 42pp; English.
XX
CC   The patent describes a new method of reducing body weight which
CC   comprises administration of a composition comprising: (i) glucagon-
CC   like peptide-1 (GLP-1); (ii) a GLP-1 analogue; (iii) a GLP-1 derivative;
CC   (iv) an agonist of the GLP-1 receptor; (v) an agonist of the GLP-1
CC   signal transduction cascade; (vi) a compound which stimulates synthesis
CC   of endogenous GLP-1; (vii) a compound that stimulates release of
CC   endogenous GLP-1; or (viii) a salt of a material described in (i)-(vii).
CC   The method may be used for treatment of obesity. The present sequence,
CC   GLP-1 (7-36) amide, represents a preferred GLP-1 compound which can be
CC   used in the method.
XX
SQ   Sequence   30 AA;

  Query Match             98.7%;  Score 153;  DB 19;  Length 30;
  Best Local Similarity   96.7%;  Pred. No. 5e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           |||||||||||||||||||||||:|||||||
Db       1 haegtftsdvssylegqaakefiawlvkgr 30


RESULT  10
AAW63182
ID   AAW63182 standard; peptide; 30 AA.
XX
AC   AAW63182;
XX
DT   16-SEP-1998  (first entry)
XX
DE   GLP-1(7-36).
XX
KW   Glucagon-like peptide-1; GLP-1; diabetes; lipophilic; tetradecanoyl;
KW   carboxynonadecanoyl; deoxycholoyl; choloyl; lithocholoyl.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Modified-site   30
FT                   /note= "optionally the C-terminal is in amide form"
XX
PN   WO9808871-A1.
XX
PD   05-MAR-1998.
XX
PF   22-AUG-1997;    97WO-DK00340.
XX
PR   20-DEC-1996;    96DK-0001470.
PR   30-AUG-1996;    96DK-0000931.
PR   08-NOV-1996;    96DK-0001259.
XX
PA   (NOVO ) NOVO-NORDISK AS.
XX
PI   Knudsen LB,  Nielsen PF,  Sorensen PO;
XX
DR   WPI; 1998-239721/21.
XX
PT   Glucagon-like peptide-1 derivatives which have lipophilic
PT   substituent - exhibit protracted profiles of action relative to
PT   known glucagon-like peptide-1 compounds and are useful in
PT   treatment of diabetes
XX
PS   Claim 36; Page -; 76pp; English.
XX
CC   New derivatives of glucagon-like peptide-1 (GLP-1) and its fragments
CC   and their analogues are disclosed in which at least one amino acid
CC   residue of the parent peptide has a lipophilic substituent attached
CC   to it. The GLP-1 fragment is preferably GLP-1(A-C) where A is 1-7 and
CC   C is 35-45. The lipophilic substituent is typically tetradecanoyl,
CC   carboxynonadecanoyl, deoxycholoyl, choloyl or lithocholoyl, and it
CC   is attached e.g. to the epsilon-amino group of a Lys residue in the
CC   peptide. The present sequence represents a preferred parent GLP-1
CC   fragment to which the lipophilic substituent is to be attached.
CC   GLP-1 and its analogues and fragments may be used in treatment of
CC   type 1 and type 2 diabetes. Prior art analogues exhibit a high
CC   clearance rate from the body, which limits their usefulness. The
CC   new lipophilically substituted compounds have a protracted profile
CC   of action compared with known analogues, e.g. GLP-1(7-37).
CC   (N.B. The present sequence is described by name in the patent
CC   specification but is not explicitly shown. It is deduced from the
CC   protein sequence shown in Swiss-Prot entry P01275 using information
CC   given in the patent.)
XX
SQ   Sequence   30 AA;

  Query Match             98.7%;  Score 153;  DB 19;  Length 30;
  Best Local Similarity   96.7%;  Pred. No. 5e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           |||||||||||||||||||||||:|||||||
Db       1 haegtftsdvssylegqaakefiawlvkgr 30


RESULT  11
AAW50906
ID   AAW50906 standard; peptide; 30 AA.
XX
AC   AAW50906;
XX
DT   17-AUG-1998  (first entry)
XX
DE   Glucagon-like peptide-1 analogue SEQ ID NO:5.
XX
KW   Glucagon-like peptide-1; GLP-1 (7-37); GLP-1 analogue; surgical trauma;
KW   stress; hormonal response; insulin resistance; catabolic reaction;
KW   human; incretin hormone.
```

```
XX
OS   Synthetic.
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Modified-site   30
FT                   /note= "amidated"
XX
PN   WO9808873-A1.
XX
PD   05-MAR-1998.
XX
PF   26-AUG-1997;    97WO-US15042.
XX
PR   21-AUG-1997;    97US-0024982.
PR   30-AUG-1996;    96US-0024982.
XX
PA   (ELIL ) LILLY & CO ELI.
XX
PI   Efendic S;
XX
DR   WPI; 1998-239722/21.
XX
PT   Use of glucagon-like peptide-1 and analogues and their derivatives
PT   - to attenuate post-surgical catabolic changes, insulin resistance
PT   and hormonal responses to stress
XX
PS   Claim 1; Page 13; 42pp; English.
XX
CC   The present sequence represents a glucagon-like peptide-1 (GLP-1)
CC   analogue, which is used in the methods of the invention. The methods
CC   are: (1) for attenuating post-surgical catabolic changes and insulin
CC   resistance, comprising administering glucagon-like peptide-1 (GLP-1), a
CC   GLP-1 analogue, a GLP-1 derivative, or a salt of this compound; (2) for
CC   attenuating post-surgical catabolic changes and hormonal responses to
CC   stress, comprising administering a compound which exerts insulino-tropic
CC   activity by interacting with the same receptor (or receptors) with which
CC   GLP-1, GLP-1 analogues and GLP-1 derivatives interact in exerting their
CC   insulino-tropic activity, and (3) for attenuating post-surgical catabolic
CC   changes and hormonal responses to stress, comprising administering a
CC   compound which enhances insulin sensitivity by interacting with the same
CC   receptor (or receptors) with which GLP-1, GLP-1 analogues and GLP-1
CC   derivatives interact to enhance insulin sensitivity. The processes are
CC   useful for improving recovery after surgery by preventing the catabolic
CC   reaction and insulin resistance caused by surgical trauma and
CC   exacerbated by pre-operative fasting. GLP-1's short half-life, and hence
CC   the need for continuous administration, are not disadvantages, as the
CC   patient is usually hospitalised before surgery, and fluids are
CC   continuously administered parenterally, before, during and after surgery.
XX
SQ   Sequence   30 AA;

  Query Match             98.7%;  Score 153;  DB 19;  Length 30;
  Best Local Similarity   96.7%;  Pred. No. 5e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           |||||||||||||||||||||:|||||||
Db       1 haegtftsdvssylegqaakefiawlvkgr 30


RESULT  12
AAY42935
ID   AAY42935 standard; peptide; 30 AA.
XX
AC   AAY42935;
XX
DT   20-DEC-1999  (first entry)
XX
DE   Glucagon-like peptide GLP-1 (7-36).
XX
KW   Glucagon-like peptide; GLP-1; antidiabetic; anti-obesity;
KW   insulinotropic; appetite suppressant.
XX
OS   Homo sapiens.
XX
PN   WO9943707-A1.
XX
PD   02-SEP-1999.
XX
PF   25-FEB-1999;    99WO-DK00085.
XX
PR   27-FEB-1998;    98DK-0000263.
PR   27-FEB-1998;    98DK-0000268.
PR   08-APR-1998;    98DK-0000508.
XX
PA   (NOVO ) NOVO-NORDISK AS.
XX
PI   Knudsen LB,  Huusfeldt PO,  Nielsen PF,  Madsen K;
XX
DR   WPI; 1999-540561/45.
XX
PT   New N-modified peptide derivatives, useful for treating diabetes,
PT   insulin resistance and obesity
XX
PS   Disclosure; Page 1; 62pp; English.
XX
CC   New glucagon-like peptide-1 (GLP-1) derivatives are disclosed which
CC   comprise residues 7-45 of GLP-1 or a fragment thereof, preferably
CC   residues 7-36, 7-37 or 7-38 or their analogues, in which (a) a
CC   lipophilic substituent is attached to at least one amino acid and (b)
CC   the N-terminal is substituted  with a group containing an optionally
CC   substituted 5- or 6-membered N-heterocycle, e.g. imidazolyl.  The
CC   compounds stimulate secretion of insulin, suppress secretion of
CC   glucagon, suppress gastric motility and/or restore glucose compliance
CC   to beta-cells. They are used to treat insulin-dependent or non-insulin-
CC   dependent diabetes mellitus, insulin resistance and obesity. They have
CC   a longer-lasting action than GLP-1 derivatives that lack the lipophilic
CC   substituent. Some of them also exist as partially structured micelle-
CC   like aggregates, so have improved solubility and stability. The present
CC   sequence is a specifically preferred example of a GLP-1 analogue on
CC   which the derivatives are based.
XX
SQ   Sequence   30 AA;

  Query Match             98.7%;  Score 153;  DB 20;  Length 30;
  Best Local Similarity   96.7%;  Pred. No. 5e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           |||||||||||||||||||||:|||||||
Db       1 haegtftsdvssylegqaakefiawlvkgr 30


RESULT  13
AAY27374
ID   AAY27374 standard; peptide; 30 AA.
XX
AC   AAY27374;
XX
DT   26-NOV-1999  (first entry)
XX
DE   Glucagon-like peptide 1 (GLP-1) fragment (residues 7-36).
XX
KW   Glucagon; glucagon-like peptide 1; GLP-1; detergent; glycogenolytic;
KW   gluconeogenesis; insulin secretion; diabetes mellitus; obesity;
KW   spasmolytic; hypoglycemia.
XX
OS   Synthetic.
XX
FH   Key             Location/Qualifiers
FT   Modified-site   30
FT                   /note= "C-terminal amide"
XX
```

PN WO9947160-A1.
XX
PD 23-SEP-1999.
XX
PF 08-MAR-1999; 99WO-DK00115.
XX
PR 13-MAR-1998; 98EP-0610006.
PR 18-MAR-1998; 98US-0078422.
XX
PA (NOVO) NOVO-NORDISK AS.
XX
PI Kaarsholm NC;
XX
DR WPI; 1999-561858/47.
XX
PT Aqueous solution of glucagon or glucagon-like peptide-1 stabilized with
PT charged detergent, for treating diabetes or obesity -
XX
PS Examples; Page 5; 27pp; English.
XX
CC The invention provides an aqueous solution that comprises: (i) at least
CC one glucagon or glucagon-like peptide-1 (GLP-1), or their analogs or
CC derivatives (I) and (ii) at least one detergent, other than dodecyl
CC phosphocholine. The peptide (I) has at least two positive or negative
CC charges or at least one charge of each sign. Glucagon is involved in
CC glycogenolytic and gluconeogenesis processes (it also has a spasmolytic
CC effect on smooth muscle) while GLP-1 promotes secretion of insulin and
CC suppresses that of glucagon. The polar head of detergent interacts with
CC charged side chains in (I) while the hydrophobic tail interacts with the
CC hydrophobic patch in (I). The solution is used to treat (non-)insulin-
CC dependent diabetes mellitus and obesity. Glucagon is also used in
CC radiology as a spasmolytic and for treating hypoglycemia. The detergent
CC stabilizes the solutions, which are available for immediate use and can
CC be stored for a long time at 4-25plusoC. The solutions may have pH
CC between 4 and 9, allowing selection of conditions that suppress chemical
CC degradation. The detergents are made from natural materials so have
CC better biological compatibility than known detergents. The present
CC sequence represents a GLP-1 peptide fragment.
XX
SQ Sequence 30 AA;

Query Match 98.7%; Score 153; DB 20; Length 30;
Best Local Similarity 96.7%; Pred. No. 5e-15;
Matches 29; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
||||||||||||||||||||||:|||||||
Db 1 haegtftsdvssylegqaakefiawlvkgr 30

RESULT 14
AAY39773
ID AAY39773 standard; peptide; 30 AA.
XX
AC AAY39773;
XX
DT 26-NOV-1999 (first entry)
XX
DE Glucagon like peptide-1 (7-36).
XX
KW Glucagon-like peptide-1; GLP-1; appetite suppression; human; diabetes;
KW spontaneous food intake; therapy.
XX
OS Homo sapiens.
XX
FH Key Location/Qualifiers
FT Misc-difference 29
FT /note= "amidated"
XX
PN WO9947161-A1.
XX
PD 23-SEP-1999.
XX
PF 16-MAR-1999; 99WO-US05571.
XX
PR 19-MAR-1998; 98US-0078544.
XX
PA (BION-) BIONEBRASKA INC.
XX
PI Goke B, Beglinger C, Coolidge TR;
XX
DR WPI; 1999-561859/47.
XX
PT New composition for controlling food intake especially in diabetes
PT sufferers -
XX
PS Claim 5; Page 22; 35pp; English.
XX
CC This sequence represents a glucagon-like peptide-1 sequence used in the
CC composition of the invention. The composition is for appetite
CC suppression, and comprises a compound binding to a GLP-1 receptor and a
CC pharmaceutical carrier. The composition can be administered to control
CC appetite and/or reduce spontaneous food intake in humans, especially in
CC humans with diabetes.
XX
SQ Sequence 30 AA;

Query Match 98.7%; Score 153; DB 20; Length 30;
Best Local Similarity 96.7%; Pred. No. 5e-15;
Matches 29; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
||||||||||||||||||||||:|||||||
Db 1 haegtftsdvssylegqaakefiawlvkgr 30

RESULT 15.
AAY34198
ID AAY34198 standard; peptide; 30 AA.
XX
AC AAY34198;
XX
DT 16-NOV-1999 (first entry)
XX
DE GLP-1 mutant peptide, GLP-1(7-36).
XX
KW GLP-1; Glucagon-like peptide-1; human; type I diabetes; type II diabetes;
KW obesity; therapy; mutein.
XX
OS Homo sapiens.
OS Synthetic.
XX
FH Key Location/Qualifiers
FT Misc-difference 30
FT /note= "optionally amidated"
XX
PN WO9943341-A1.
XX
PD 02-SEP-1999.
XX
PF 25-FEB-1999; 99WO-DK00084.
XX
PR 27-FEB-1998; 98DK-0000268.
PR 27-FEB-1998; 98DK-0000272.
XX
PA (NOVO) NOVO-NORDISK AS.
XX
PI Knudsen LB, Huusfeldt PO, Nielsen PF, Kaarsholm NC, Olsen HB;
PI Bjorn SE;
XX
DR WPI; 1999-540500/45.
XX
PT Composition containing stabilized derivatives of glucagon-like
PT peptide-1 with high alpha-helix content, for treating diabetes and

PT obesity
XX
PS Claim 30; Page -; 63pp; English.
XX
CC This sequence represents a mutant of the human glucagon-like peptide-1
CC (GLP-1), and has a helix content (determined by circular dichroism at
CC 222 nm in water at 20-24 degrees C) over 25, preferably 25-50,% at
CC peptide concentration about 10 microM. The GLP-1 mutant can be used in a
CC pharmaceutical composition of the invention. The compositions are used to
CC treat diabetes (both type I and particularly type II) and/or obesity.
CC They have better solubility and/or stability (against endogenous
CC diaminopeptidyl peptidase) than parent peptides, with long persistence in
CC the plasma and retention of biological activity. They form partially
CC structured micelle-like aggregates in solution, with the helix content
CC practically independent of concentration.
CC NOTE: This sequence was created from the human GLP-1 sequence using
CC information given in the specification.
XX
SQ Sequence 30 AA;

Query Match 98.7%; Score 153; DB 20; Length 30;
Best Local Similarity 96.7%; Pred. No. 5e-15;
Matches 29; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

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Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           |||||||||||||||||||||:|||||||
Db       1 haegtftsdvssylegqaakefiawlvkgr 30
```

Search completed: August 7, 2002, 09:17:47
Job time: 186 sec

GenCore version 4.5

OM protein - protein search, using sw model

Run on: August 7, 2002, 09:17:51 ; Search time 24.96 Seconds
(without alignments)
207.927 Million cell updates/sec

Title: US-09-635-679C-3
Perfect score: 155
Sequence: 1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 562222 seqs, 172994929 residues

Total number of hits satisfying chosen parameters: 562222

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : SPTREMBL_19:*
1: sp_archea:*
2: sp_bacteria:*
3: sp_fungi:*
4: sp_human:*
5: sp_invertebrate:*
6: sp_mammal:*
7: sp_mhc:*
8: sp_organelle:*
9: sp_phage:*
10: sp_plant:*
11: sp_rodent:*
12: sp_virus:*
13: sp_vertebrate:*
14: sp_unclassified:*
15: sp_rvirus:*
16: sp_bacteriap:*
17: sp_archeap:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	153	98.7	180	6	Q95LG0	Q95lg0 canis famil
2	141	91.0	206	13	Q91410	Q91410 gallus gall
3	135	87.1	204	13	O12956	O12956 heloderma s
4	123	79.4	266	13	O42143	O42143 xenopus lae
5	118	76.1	219	13	O42144	O42144 xenopus lae
6	116	74.8	72	13	Q91409	Q91409 oncorhynchu
7	116	74.8	178	13	Q91971	Q91971 oncorhynchu
8	111	71.6	178	13	Q91189	Q91189 oncorhynchu
9	101	65.2	121	13	Q9DDE6	Q9dde6 brachydanio
10	100	64.5	160	13	Q9PUR1	Q9pur1 petromyzon
11	93	60.0	62	13	Q9PRW9	Q9prw9 scyliorhinu
12	88	56.8	96	13	Q9DG43	Q9dg43 ambloplites
13	81	52.3	120	13	Q9PUR0	Q9pur0 petromyzon
14	61	39.4	169	4	Q96QK3	Q96qk3 homo sapien
15	61	39.4	171	11	Q9D2Z7	Q9d2z7 mus musculu
16	59	38.1	130	11	Q9CVF1	Q9cvf1 mus musculu
17	59	38.1	144	11	Q9D887	Q9d887 mus musculu
18	58.5	37.7	426	16	P71006	P71006 bacillus su
19	57	36.8	389	2	Q93IH2	Q93ih2 wolinella s
20	56	36.1	172	13	Q9DE29	Q9de29 brachydanio
21	55.5	35.8	175	13	Q90XZ4	Q90xz4 ictalurus p
22	54	34.8	138	13	Q98SP4	Q98sp4 oncorhynchu
23	54	34.8	171	13	Q9PUF8	Q9puf8 xenopus lae
24	54	34.8	173	13	Q98SP5	Q98sp5 oncorhynchu
25	52.5	33.9	175	13	Q98TU3	Q98tu3 brachydanio
26	52	33.5	89	13	Q98SP6	Q98sp6 anas platyr
27	51	32.9	171	10	Q9FGY5	Q9fgy5 arabidopsis
28	51	32.9	352	5	Q9XXQ1	Q9xxq1 caenorhabdi
29	51	32.9	810	4	Q9NTW8	Q9ntw8 homo sapien
30	51	32.9	867	4	Q9UFX9	Q9ufx9 homo sapien
31	50	32.3	28	13	Q9PRN8	Q9prn8 carassius a
32	50	32.3	571	5	Q966F0	Q966f0 caenorhabdi
33	50	32.3	576	5	Q9BIJ4	Q9bij4 caenorhabdi
34	50	32.3	589	5	Q9N5B9	Q9n5b9 caenorhabdi
35	50	32.3	786	5	Q9N5B7	Q9n5b7 caenorhabdi
36	50	32.3	835	5	Q9N5B8	Q9n5b8 caenorhabdi
37	49.5	31.9	378	5	Q25062	Q25062 hydractinia
38	49	31.6	575	9	Q38545	Q38545 bacteriopha
39	49	31.6	3600	10	Q9SA64	Q9sa64 arabidopsis
40	48.5	31.3	210	5	Q95XL4	Q95xl4 caenorhabdi
41	48.5	31.3	221	16	Q9I6W5	Q9i6w5 pseudomonas
42	48.5	31.3	347	2	Q93PC9	Q93pc9 microscilla
43	48.5	31.3	372	10	Q9XFW9	Q9xfw9 cicer ariet
44	48	31.0	331	5	O18301	O18301 caenorhabdi
45	48	31.0	726	12	Q69068	Q69068 human herpe

ALIGNMENTS

RESULT 1
Q95LG0
ID Q95LG0 PRELIMINARY; PRT; 180 AA.
AC Q95LG0;
DT 01-DEC-2001 (TrEMBLrel. 19, Created)
DT 01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE PREPROGLUCAGON.
OS Canis familiaris (Dog).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
OX NCBI_TaxID=9615;
RN [1]
RP SEQUENCE FROM N.A.
RA Irwin D.M.;
RT "cDNA cloning of proglucagon from the stomach and pancreas of the dog.";
RL Submitted (SEP-2000) to the EMBL/GenBank/DDBJ databases.
DR EMBL; AF308439; AAL09425.1; -.
SQ SEQUENCE 180 AA; 21114 MW; 80F66941AFC324FD CRC64;

Query Match 98.7%; Score 153; DB 6; Length 180;
Best Local Similarity 96.7%; Pred. No. 3.9e-15;
Matches 29; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
||||||||||||||||||||||:|||||||
Db 98 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 127

RESULT 2
Q91410
ID Q91410 PRELIMINARY; PRT; 206 AA.
AC Q91410;
DT 01-NOV-1996 (TrEMBLrel. 01, Created)
DT 01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE PROGLUCAGON.

```
GN   PROGLUCAGON.
OS   Gallus gallus (Chicken).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
OC   Gallus.
OX   NCBI_TaxID=9031;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=95295739; PubMed=7776976;
RA   Irwin D.M., Wong J.;
RT   "Trout and chicken proglucagon: alternative splicing generates mRNA
RT   transcripts encoding glucagon-like peptide 2.";
RL   Mol. Endocrinol. 9:267-277(1995).
DR   EMBL; S78477; AAB34506.1; -.
DR   HSSP; P01274; 1GCN.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 3.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 3.
DR   PROSITE; PS00260; GLUCAGON; 3.
SQ   SEQUENCE   206 AA;  23875 MW;  AB299E1B02FC6AA4 CRC64;
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  Query Match             91.0%;  Score 141;  DB 13;  Length 206;
  Best Local Similarity   83.3%;  Pred. No. 3e-13;
  Matches   25;  Conservative    4;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           |||||:|||::||||||||||||:|||| ||
Db     118 HAEGTYTSDITSYLEGQAAKEFIAWLVNGR 147
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RESULT   3
O12956
ID   O12956      PRELIMINARY;      PRT;   204 AA.
AC   O12956; O12955;
DT   01-JUL-1997 (TrEMBLrel. 04, Created)
DT   01-JUL-1997 (TrEMBLrel. 04, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   GLUCAGON PRECURSOR.
OS   Heloderma suspectum (Gila monster).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Lepidosauria; Squamata; Scleroglossa; Anguimorpha; Helodermatidae;
OC   Heloderma.
OX   NCBI_TaxID=8554;
RN   [1]
RP   SEQUENCE FROM N.A., ALTERNATIVE SPLICING, AND TISSUE SPECIFICITY.
RC   TISSUE=INTESTINE, AND PANCREAS;
RX   MEDLINE=97172477; PubMed=9020121;
RA   Chen Y.E., Drucker D.J.;
RT   "Tissue-specific expression of unique mRNAs that encode proglucagon-
RT   derived peptides or exendin 4 in the lizard.";
RL   J. Biol. Chem. 272:4108-4115(1997).
CC   -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
CC       THE BLOOD SUGAR LEVEL (BY SIMILARITY).
CC   -!- ALTERNATIVE PRODUCTS: 2 ISOFORMS; LPII (SHOWN HERE) AND LPI; ARE
CC       PRODUCED BY ALTERNATIVE SPLICING.
CC   -!- TISSUE SPECIFICITY: ISOFORM LPII IS EXPRESSED IN BOTH PANCREAS AND
CC       INTESTINE. EXPRESSION OF ISOFORM LPI IS RESTRICTED TO THE
CC       PANCREAS. NEITHER ISOFORM IS DETECTED IN SALIVARY GLAND.
CC   -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS IN
CC       RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
DR   EMBL; U77612; AAB51129.1; -.
DR   EMBL; U77611; AAB51128.1; -.
DR   HSSP; P01274; 1GCN.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 3.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 3.
DR   PROSITE; PS00260; GLUCAGON; 2.
KW   Glucagon family; Hormone; Cleavage on pair of basic residues; Signal;
KW   Alternative splicing.
FT   SIGNAL       1     20       BY SIMILARITY.
FT   PEPTIDE      21    50       GRPP (GLICENTINE RELATED POLYPEPTIDE).
FT   PEPTIDE      53    81       GLUCAGON.
FT   PEPTIDE      116   145      GLUCAGON-LIKE PEPTIDE 1.
FT   PEPTIDE      164   196      GLUCAGON-LIKE PEPTIDE 2.
FT   VARSPLIC     149   149      D -> E (IN ISOFORM LPI).
FT   VARSPLIC     150   204      MISSING (IN ISOFORM LPI).
SQ   SEQUENCE   204 AA;  23553 MW;  B132E3FE46873E72 CRC64;
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  Query Match             87.1%;  Score 135;  DB 13;  Length 204;
  Best Local Similarity   80.0%;  Pred. No. 2.4e-12;
  Matches   24;  Conservative    4;  Mismatches    2;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           ||:| :|||:||||||||||||:|||| ||
Db     115 HADGRYTSDISSYLEGQAAKEFIAWLVNGR 145
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RESULT   4
O42143
ID   O42143      PRELIMINARY;      PRT;   266 AA.
AC   O42143;
DT   01-JAN-1998 (TrEMBLrel. 05, Created)
DT   01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   GLUCAGON I PRECURSOR [CONTAINS: GLUCAGON; GLUCAGON-LIKE PEPTIDE 1A
DE   (GLP-1A); GLUCAGON-LIKE PEPTIDE 1B (GLP-1B); GLUCAGON-LIKE PEPTIDE 1C
DE   (GLP-1C); GLUCAGON-LIKE PEPTIDE 2 (GLP-2)].
OS   Xenopus laevis (African clawed frog).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidea; Pipidae;
OC   Xenopodinae; Xenopus.
OX   NCBI_TaxID=8355;
RN   [1]
RP   SEQUENCE FROM N.A., AND ALTERNATIVE SPLICING.
RC   TISSUE=PANCREAS;
RX   MEDLINE=97368292; PubMed=9223287;
RA   Irwin D.M., Satkunarajah M., Wen Y., Brubaker P.L., Pederson R.A.,
RA   Wheeler M.B.;
RT   "The Xenopus proglucagon gene encodes novel GLP-1-like peptides with
RT   insulinotropic properties.";
RL   Proc. Natl. Acad. Sci. U.S.A. 94:7915-7920(1997).
CC   -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
CC       THE BLOOD SUGAR LEVEL.
CC   -!- ALTERNATIVE PRODUCTS: 2 ISOFORMS; 1 (SHOWN HERE) AND 2; ARE
CC       PRODUCED BY ALTERNATIVE SPLICING.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
DR   EMBL; AF004432; AAB65660.1; -.
DR   HSSP; P01274; 1GCN.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 5.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 5.
DR   PROSITE; PS00260; GLUCAGON; 5.
KW   Glucagon family; Hormone; Signal; Cleavage on pair of basic residues;
KW   Multigene family; Alternative splicing.
FT   SIGNAL       1     ?        POTENTIAL.
FT   PEPTIDE      53    81       GLUCAGON.
FT   PEPTIDE      97    133      GLUCAGON-LIKE PEPTIDE 1A.
FT   PEPTIDE      142   173      GLUCAGON-LIKE PEPTIDE 1B.
FT   PEPTIDE      180   211      GLUCAGON-LIKE PEPTIDE 1C.
FT   PEPTIDE      227   259      GLUCAGON-LIKE PEPTIDE 2.
FT   VARSPLIC     214   261      MISSING (IN ISOFORM 2).
SQ   SEQUENCE   266 AA;  30951 MW;  544F7BBC20AF872C CRC64;
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  Query Match             79.4%;  Score 123;  DB 13;  Length 266;
  Best Local Similarity   70.0%;  Pred. No. 2.1e-10;
  Matches   21;  Conservative    7;  Mismatches    2;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           |||||||:|:::|||:||||||: ||:|||
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Db    180 HAEGTFTNDMTNYLEEKAAKEFVGWLIKGR 209


RESULT   5
O42144
ID   O42144      PRELIMINARY;      PRT;   219 AA.
AC   O42144;
DT   01-JAN-1998 (TrEMBLrel. 05, Created)
DT   01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   GLUCAGON II PRECURSOR [CONTAINS: GLUCAGON; GLUCAGON-LIKE PEPTIDE 1A
DE   (GLP-1A); GLUCAGON-LIKE PEPTIDE 1B (GLP-1B); GLUCAGON-LIKE PEPTIDE 1C
DE   (GLP-1C)].
OS   Xenopus laevis (African clawed frog).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidea; Pipidae;
OC   Xenopodinae; Xenopus.
OX   NCBI_TaxID=8355;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=PANCREAS;
RX   MEDLINE=97368292; PubMed=9223287;
RA   Irwin D.M., Satkunarajah M., Wen Y., Brubaker P.L., Pederson R.A.,
RA   Wheeler M.B.;
RT   "The Xenopus proglucagon gene encodes novel GLP-1-like peptides with
RT   insulinotropic properties.";
RL   Proc. Natl. Acad. Sci. U.S.A. 94:7915-7920(1997).
CC   -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
CC       THE BLOOD SUGAR LEVEL.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
DR   EMBL; AF004433; AAB65661.1; -.
DR   HSSP; P01274; 1GCN.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 4.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 4.
DR   PROSITE; PS00260; GLUCAGON; 3.
KW   Glucagon family; Hormone; Signal; Cleavage on pair of basic residues;
KW   Multigene family.
FT   SIGNAL       1     20       POTENTIAL.
FT   PEPTIDE     53     81       GLUCAGON.
FT   PEPTIDE     97    133       GLUCAGON-LIKE PEPTIDE 1A.
FT   PEPTIDE    142    173       GLUCAGON-LIKE PEPTIDE 1B.
FT   PEPTIDE    180    211       GLUCAGON-LIKE PEPTIDE 1C.
SQ   SEQUENCE   219 AA;  25271 MW;  ACC699233C362CE0 CRC64;


  Query Match             76.1%;  Score 118;  DB 13;  Length 219;
  Best Local Similarity   66.7%;  Pred. No. 9.7e-10;
  Matches   20;  Conservative    7;  Mismatches    3;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           |||||||:|:::|||  :|||||: ||: ||
Db     180 HAEGTFTNDMTNYLEEKAAKEFVGWLINGR 209


RESULT   6
Q91409
ID   Q91409      PRELIMINARY;      PRT;    72 AA.
AC   Q91409; Q91232;
DT   01-NOV-1996 (TrEMBLrel. 01, Created)
DT   01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT   01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE   PROGLUCAGON (FRAGMENT).
OS   Oncorhynchus tschawytscha (Chinook salmon) (King salmon).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Actinopterygii; Neopterygii; Teleostei; Euteleostei;
OC   Protacanthopterygii; Salmoniformes; Salmonidae; Oncorhynchus.
OX   NCBI_TaxID=74940;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=95295739; PubMed=7776976;
RA   Irwin D.M., Wong J.;
RT   "Trout and chicken proglucagon: alternative splicing generates mRNA
RT   transcripts encoding glucagon-like peptide 2.";
RL   Mol. Endocrinol. 9:267-277(1995).
DR   EMBL; S78474; AAD14283.1; -.
DR   EMBL; U19920; AAC59670.1; -.
DR   HSSP; P01274; 1GCN.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 2.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 2.
DR   PROSITE; PS00260; GLUCAGON; UNKNOWN_1.
FT   NON_TER      1      1
SQ   SEQUENCE   72 AA;  8293 MW;  8584352B1C260A31 CRC64;


  Query Match             74.8%;  Score 116;  DB 13;  Length 72;
  Best Local Similarity   66.7%;  Pred. No. 5.2e-10;
  Matches   20;  Conservative    7;  Mismatches    3;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           |||||||:|:::|||  :|||||: ||: ||
Db      39 HADGTYTSDVSTYLQDQAAKDFVSWLKSGR 68


RESULT   7
Q91971
ID   Q91971      PRELIMINARY;      PRT;   178 AA.
AC   Q91971; Q91408; Q91188; Q92169;
DT   01-NOV-1996 (TrEMBLrel. 01, Created)
DT   01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   GLUCAGON I PRECURSOR.
OS   Oncorhynchus mykiss (Rainbow trout) (Salmo gairdneri).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Actinopterygii; Neopterygii; Teleostei; Euteleostei;
OC   Protacanthopterygii; Salmoniformes; Salmonidae; Oncorhynchus.
OX   NCBI_TaxID=8022;
RN   [1]
RP   SEQUENCE FROM N.A., AND ALTERNATIVE SPLICING.
RC   TISSUE=DISTAL SMALL INTESTINE, AND PANCREAS;
RX   MEDLINE=95295739; PubMed=7776976;
RA   Irwin D.M., Wong J.;
RT   "Trout and chicken proglucagon: alternative splicing generates mRNA
RT   transcripts encoding glucagon-like peptide 2.";
RL   Mol. Endocrinol. 9:267-277(1995).
CC   -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
CC       THE BLOOD SUGAR LEVEL (BY SIMILARITY).
CC   -!- ALTERNATIVE PRODUCTS: 2 ISOFORMS; INTESTINAL (SHOWN HERE) AND
CC       PANCREATIC; ARE PRODUCED BY ALTERNATIVE SPLICING.
CC   -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS IN
CC       RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
DR   EMBL; U19913; AAC59667.1; -.
DR   EMBL; U19917; AAC59669.1; -.
DR   EMBL; U19918; AAC60212.1; -.
DR   EMBL; U19919; AAC60213.1; -.
DR   EMBL; U19918; AAC60213.1; JOINED.
DR   EMBL; S78475; AAB34505.1; -.
DR   EMBL; S78473; AAB34504.2; -.
DR   HSSP; P01274; 1GCN.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 3.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 3.
DR   PROSITE; PS00260; GLUCAGON; 3.
KW   Glucagon family; Hormone; Cleavage on pair of basic residues; Signal;
KW   Alternative splicing; Multigene family.
FT   SIGNAL       1      ?       POTENTIAL.
FT   PEPTIDE      ?     49       GRPP (GLICENTINE RELATED POLYPEPTIDE).
FT   PEPTIDE     52     80       GLUCAGON.
FT   PEPTIDE     85    120       GLUCAGON-LIKE PEPTIDE 1.
FT   PEPTIDE    137    169       GLUCAGON-LIKE PEPTIDE 2.
FT   VARSPLIC   124    178       MISSING (IN PANCREATIC ISOFORM).
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SQ   SEQUENCE   178 AA;  20034 MW;  5CF6980CF2A9D58E CRC64;


  Query Match             74.8%;  Score 116;  DB 13;  Length 178;
  Best Local Similarity   66.7%;  Pred. No. 1.5e-09;
  Matches   20;  Conservative    7;  Mismatches    3;  Indels    0;  Gaps    0;

Qy      1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
          ||:||:|||||:||: ||||:|::||  ||
Db     90 HADGTYTSDVSTYLQDQAAKDFVSWLKSGR 119


RESULT   8
Q91189
ID   Q91189      PRELIMINARY;      PRT;   178 AA.
AC   Q91189; Q92168;
DT   01-NOV-1996 (TrEMBLrel. 01, Created)
DT   01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   GLUCAGON II PRECURSOR.
OS   Oncorhynchus mykiss (Rainbow trout) (Salmo gairdneri).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Actinopterygii; Neopterygii; Teleostei; Euteleostei;
OC   Protacanthopterygii; Salmoniformes; Salmonidae; Oncorhynchus.
OX   NCBI_TaxID=8022;
RN   [1]
RP   SEQUENCE FROM N.A., AND ALTERNATIVE SPLICING.
RC   TISSUE=DISTAL SMALL INTESTINE, AND PANCREAS;
RX   MEDLINE=95295739; PubMed=7776976;
RA   Irwin D.M., Wong J.;
RT   "Trout and chicken proglucagon: alternative splicing generates mRNA
RT   transcripts encoding glucagon-like peptide 2.";
RL   Mol. Endocrinol. 9:267-277(1995).
CC   -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
CC       THE BLOOD SUGAR LEVEL (BY SIMILARITY).
CC   -!- ALTERNATIVE PRODUCTS: 2 ISOFORMS; INTESTINAL (SHOWN HERE) AND
CC       PANCREATIC; ARE PRODUCED BY ALTERNATIVE SPLICING.
CC   -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS IN
CC       RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
DR   EMBL; U19914; AAC59668.1; -.
DR   EMBL; U19916; AAC60210.1; -.
DR   EMBL; U19915; AAC60210.1; JOINED.
DR   EMBL; U19915; AAC60209.1; -.
DR   HSSP; P01274; 1GCN.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 3.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 3.
DR   PROSITE; PS00260; GLUCAGON; UNKNOWN_2.
KW   Glucagon family; Hormone; Cleavage on pair of basic residues; Signal;
KW   Alternative splicing; Multigene family.
FT   SIGNAL       1      ?       POTENTIAL.
FT   PEPTIDE      ?     49       GRPP (GLICENTINE RELATED POLYPEPTIDE).
FT   PEPTIDE     52     80       GLUCAGON.
FT   PEPTIDE     85    120       GLUCAGON-LIKE PEPTIDE 1.
FT   PEPTIDE    137    169       GLUCAGON-LIKE PEPTIDE 2.
FT   VARSPLIC   124    178       MISSING (IN PANCREATIC ISOFORM).
SQ   SEQUENCE   178 AA;  19998 MW;  E89D73866CD91C66 CRC64;


  Query Match             71.6%;  Score 111;  DB 13;  Length 178;
  Best Local Similarity   65.5%;  Pred. No. 8.6e-09;
  Matches   19;  Conservative    7;  Mismatches    3;  Indels    0;  Gaps    0;

Qy      1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKG 29
          ||:||:|||||:||: ||||:|::||  |
Db     90 HADGTYTSDVSTYLQDQAAKDFVSWLKSG 118


RESULT   9
Q9DDE6
ID   Q9DDE6      PRELIMINARY;      PRT;   121 AA.
AC   Q9DDE6;
DT   01-MAR-2001 (TrEMBLrel. 16, Created)
DT   01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
DT   01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE   GLUCAGON POLYPROTEIN.
GN   GCG OR GLU.
OS   Brachydanio rerio (Zebrafish) (Zebra danio).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Actinopterygii; Neopterygii; Teleostei; Euteleostei; Ostariophysi;
OC   Cypriniformes; Cyprinidae; Danio.
OX   NCBI_TaxID=7955;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=99425190; PubMed=10495291;
RA   Argenton F., Zecchin E., Bortolussi M.;
RT   "Early appearance of pancreatic hormone-expressing cells in the
RT   zebrafish embryo.";
RL   Mech. Dev. 87:217-221(1999).
DR   EMBL; AJ133697; CAC20108.1; -.
DR   HSSP; P01274; 1GCN.
DR   ZFIN; ZDB-GENE-010219-1; gcg.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 2.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 2.
DR   PROSITE; PS00260; GLUCAGON; 1.
KW   Polyprotein.
FT   CHAIN       49     79       GLUCAGON.
FT   CHAIN       88    121       GLUCAGON-LIKE PEPTIDE 1.
SQ   SEQUENCE   121 AA;  13537 MW;  A85385F690DA180F CRC64;


  Query Match             65.2%;  Score 101;  DB 13;  Length 121;
  Best Local Similarity   66.7%;  Pred. No. 1.8e-07;
  Matches   20;  Conservative    5;  Mismatches    5;  Indels    0;  Gaps    0;

Qy      1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
          |||||:||||||||: |||: |:| |  |:
Db     88 HAEGTYTSDVSSYLQDQAAQRFVARLKSGQ 117


RESULT  10
Q9PUR1
ID   Q9PUR1      PRELIMINARY;      PRT;   160 AA.
AC   Q9PUR1; Q9PRZ8; Q9PRZ7;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE   GLUCAGON I PRECURSOR [CONTAINS: GLUCAGON; GLUCAGON-LIKE PEPTIDE 1
DE   (GLP-1); GLUCAGON-LIKE PEPTIDE 2 (GLP-2)].
OS   Petromyzon marinus (Sea lamprey).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Hyperoartia;
OC   Petromyzontiformes; Petromyzontidae; Petromyzon.
OX   NCBI_TaxID=7757;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=INTESTINE;
RX   MEDLINE=20022986; PubMed=10555286;
RA   Irwin D.M., Huner O., Youson J.H.;
RT   "Lamprey proglucagon and the origin of glucagon-like peptides.";
RL   Mol. Biol. Evol. 16:1548-1557(1999).
RN   [2]
RP   SEQUENCE OF 43-71 AND 82-113.
RC   TISSUE=INTESTINE;
RX   MEDLINE=94010172; PubMed=8405897;
RA   Conlon J.M., Nielsen P.F., Youson J.H.;
RT   "Primary structures of glucagon and glucagon-like peptide isolated
RT   from the intestine of the parasitic phase lamprey Petromyzon
RT   marinus.";
RL   Gen. Comp. Endocrinol. 91:96-104(1993).
CC   -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
CC       THE BLOOD SUGAR LEVEL.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
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DR   EMBL; AF159707; AAF09186.1; -.
DR   HSSP; P01275; 1BH0.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 2.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 2.
DR   PROSITE; PS00260; GLUCAGON; 2.
KW   Glucagon family; Hormone; Signal; Cleavage on pair of basic residues;
KW   Multigene family.
FT   SIGNAL       1     22       POTENTIAL.
FT   PEPTIDE      43    71       GLUCAGON.
FT   PEPTIDE      82    113      GLUCAGON-LIKE PEPTIDE 1.
FT   PEPTIDE     130    160      GLUCAGON-LIKE PEPTIDE 2.
SQ   SEQUENCE   160 AA;  18042 MW;  9A52C530D5A74072 CRC64;


  Query Match             64.5%;  Score 100;  DB 13;  Length 160;
  Best Local Similarity   56.7%;  Pred. No. 3.5e-07;
  Matches   17;  Conservative    6;  Mismatches    7;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           |:||||||| | ||| : ||:|: ||:  :
Db      43 HSEGTFTSDYSKYLENKQAKDFVRWLMNAK 72


RESULT  11
Q9PRW9
ID   Q9PRW9      PRELIMINARY;      PRT;    62 AA.
AC   Q9PRW9; Q9PRX0; Q9PRW8;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
DT   01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE   GLUCAGON PRECURSOR [CONTAINS: GLUCAGON-29; GLUCAGON-33; GLUCAGON-LIKE
DE   PEPTIDE] (FRAGMENTS).
OS   Scyliorhinus canicula (Spotted dogfish) (Spotted catshark).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Chondrichthyes;
OC   Elasmobranchii; Galeomorphii; Galeoidea; Carcharhiniformes;
OC   Scyliorhinidae; Scyliorhinus.
OX   NCBI_TaxID=7830;
RN   [1]
RP   SEQUENCE.
RC   TISSUE=PANCREAS;
RX   MEDLINE=94286411; PubMed=8015974;
RA   Conlon J.M., Hazon N., Thim L.;
RT   "Primary structures of peptides derived from proglucagon isolated from
RT   the pancreas of the elasmobranch fish, Scyliorhinus canicula.";
RL   Peptides 15:163-167(1994).
CC   -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
CC       THE BLOOD SUGAR LEVEL.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
DR   HSSP; P01274; 1GCN.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 2.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 2.
DR   PROSITE; PS00260; GLUCAGON; 2.
KW   Glucagon family; Hormone.
FT   PEPTIDE       1     29       GLUCAGON-29.
FT   PEPTIDE       1     33       GLUCAGON-33.
FT   NON_CONS     33     34
FT   PEPTIDE      34     62       GLUCAGON-LIKE PEPTIDE.
SQ   SEQUENCE   62 AA;  7270 MW;  C5FF487C12C69CD1 CRC64;


  Query Match             60.0%;  Score 93;  DB 13;  Length 62;
  Best Local Similarity   55.6%;  Pred. No. 1.3e-06;
  Matches   15;  Conservative    7;  Mismatches    5;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLV 27
           |:||||||| | |:: : ||:|: ||:
Db       1 HSEGTFTSDYSKYMDNRRAKDFVQWLM 27


RESULT  12
Q9DG43
ID   Q9DG43      PRELIMINARY;      PRT;    96 AA.
AC   Q9DG43;
DT   01-MAR-2001 (TrEMBLrel. 16, Created)
DT   01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
DT   01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE   PROGLUCAGON (FRAGMENT).
OS   Ambloplites rupestris.
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei;
OC   Acanthomorpha; Acanthopterygii; Percomorpha; Perciformes; Percoidei;
OC   Centrarchidae; Ambloplites.
OX   NCBI_TaxID=109273;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Al-Mahrouki A.A., Irwin D.M., Youson J.H.;
RT   "Rock Bass Proglucagon.";
RL   Submitted (SEP-1999) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AF190499; AAG16778.1; -.
DR   HSSP; P01274; 1GCN.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 2.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 2.
DR   PROSITE; PS00260; GLUCAGON; UNKNOWN_1.
FT   NON_TER       1      1
FT   CHAIN         1    >29       GLUCAGON.
FT   CHAIN        39    >70       GLUCAGON-LIKE PEPTIDE 1.
FT   CHAIN        86    >96       GLUCAGON-LIKE PEPTIDE 2.
FT   NON_TER      96     96
SQ   SEQUENCE   96 AA;  11225 MW;  6435033EBDDC00CE CRC64;


  Query Match             56.8%;  Score 88;  DB 13;  Length 96;
  Best Local Similarity   43.3%;  Pred. No. 1.2e-05;
  Matches   13;  Conservative   11;  Mismatches    6;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           |::||||:| ::||| : |::|: ||:  :
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RESULT  13
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ID   Q9PUR0      PRELIMINARY;      PRT;   120 AA.
AC   Q9PUR0;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE   GLUCAGON II PRECURSOR [CONTAINS: GLUCAGON; GLUCAGON-LIKE PEPTIDE
DE   (GLP)].
OS   Petromyzon marinus (Sea lamprey).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Hyperoartia;
OC   Petromyzontiformes; Petromyzontidae; Petromyzon.
OX   NCBI_TaxID=7757;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=INTESTINE;
RX   MEDLINE=20022986; PubMed=10555286;
RA   Irwin D.M., Huner O., Youson J.H.;
RT   "Lamprey proglucagon and the origin of glucagon-like peptides.";
RL   Mol. Biol. Evol. 16:1548-1557(1999).
CC   -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
CC       THE BLOOD SUGAR LEVEL.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
DR   EMBL; AF159708; AAF09187.1; -.
DR   HSSP; P01275; 1BH0.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 2.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 2.
DR   PROSITE; PS00260; GLUCAGON; 2.
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```
KW   Glucagon family; Hormone; Signal; Cleavage on pair of basic residues;
KW   Multigene family.
FT   SIGNAL        1      ?       POTENTIAL.
FT   PEPTIDE       44     72      GLUCAGON.
FT   PEPTIDE       89     120     GLUCAGON-LIKE PEPTIDE.
SQ   SEQUENCE   120 AA;  13397 MW;  FBDE667B96E198D8 CRC64;


  Query Match             52.3%;  Score 81;  DB 13;  Length 120;
  Best Local Similarity   48.1%;  Pred. No. 0.00018;
  Matches   13;  Conservative    9;  Mismatches    5;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLV 27
           |::|:|||| | :|: : ||:|: ||:
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RESULT  14
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ID   Q96QK3      PRELIMINARY;      PRT;   169 AA.
AC   Q96QK3;
DT   01-DEC-2001 (TrEMBLrel. 19, Created)
DT   01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
DT   01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE   VASOACTIVE INTESTINAL PEPTIDE.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=PROSTATE;
RA   Strausberg R.;
RL   Submitted (JUL-2001) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; BC009794; AAH09794.1; -.
SQ   SEQUENCE   169 AA;  19081 MW;  F325BDFEF47132C3 CRC64;


  Query Match             39.4%;  Score 61;  DB 4;  Length 169;
  Best Local Similarity   46.7%;  Pred. No. 0.29;
  Matches   14;  Conservative    5;  Mismatches   11;  Indels    0;  Gaps    0;

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           ||:| |||| |  |   :||::|  |:  |
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RESULT  15
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AC   Q9D2Z7;
DT   01-JUN-2001 (TrEMBLrel. 17, Created)
DT   01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   VASOACTIVE INTESTINAL POLYPEPTIDE.
GN   VIP.
OS   Mus musculus (Mouse).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX   NCBI_TaxID=10090;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   STRAIN=C57BL/6J; TISSUE=CECUM;
RX   MEDLINE=21085660; PubMed=11217851;
RA   Kawai J., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y.,
RA   Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,
RA   Aizawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
RA   Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,
RA   Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
RA   Fleischmann W., Gaasterland T., Gissi C., King B., Kochiwa H.,
RA   Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
RA   Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T.,
RA   Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
RA   Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,
RA   Brownstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M.,
RA   Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,
RA   Lyons P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P.,
RA   Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,
RA   Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
RA   Suzuki H., Toyo-oka K., Wang K.H., Weitz C., Whittaker C., Wilming L.,
RA   Wynshaw-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S.,
RA   Hayashizaki Y.;
RT   "Functional annotation of a full-length mouse cDNA collection.";
RL   Nature 409:685-690(2001).
DR   EMBL; AK018599; BAB31301.1; -.
DR   MGD; MGI:98933; Vip.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 2.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 2.
DR   PROSITE; PS00260; GLUCAGON; 1.
SQ   SEQUENCE   171 AA;  19135 MW;  134A434DB6DF1254 CRC64;


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  Matches   14;  Conservative    5;  Mismatches   11;  Indels    0;  Gaps    0;

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Job time: 210 sec
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GenCore version 4.5

OM protein - protein search, using sw model

Run on: August 7, 2002, 09:14:51 ; Search time 12.97 Seconds
(without alignments)
56.497 Million cell updates/sec

Title: US-09-635-679C-3
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Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 231628 seqs, 24425594 residues

Total number of hits satisfying chosen parameters: 231628

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	153	98.7	30	1	US-08-066-480-6	Sequence 6, Appli
2	153	98.7	30	1	US-08-095-162-1	Sequence 1, Appli
3	153	98.7	30	1	US-08-470-220A-1	Sequence 1, Appli
4	153	98.7	30	2	US-08-927-227-1	Sequence 1, Appli
5	153	98.7	30	3	US-08-967-374-1	Sequence 1, Appli
6	153	98.7	30	4	US-09-348-136-1	Sequence 1, Appli
7	153	98.7	30	4	US-08-961-405A-5	Sequence 5, Appli
8	153	98.7	30	4	US-08-915-918A-5	Sequence 5, Appli
9	153	98.7	30	4	US-09-302-596-4	Sequence 4, Appli
10	153	98.7	30	4	US-08-472-349-3	Sequence 3, Appli
11	153	98.7	30	4	US-09-333-415-4	Sequence 4, Appli
12	153	98.7	30	4	US-09-585-181A-4	Sequence 4, Appli
13	153	98.7	30	5	PCT-US95-15800-27	Sequence 27, Appl
14	153	98.7	31	1	US-09-025-951-1	Sequence 1, Appli
15	153	98.7	31	1	US-08-095-162-3	Sequence 3, Appli
16	153	98.7	31	1	US-08-295-913A-1	Sequence 1, Appli
17	153	98.7	31	1	US-08-470-220A-3	Sequence 3, Appli
18	153	98.7	31	2	US-08-807-263-3	Sequence 3, Appli
19	153	98.7	31	3	US-08-967-374-3	Sequence 3, Appli
20	153	98.7	31	4	US-08-961-405A-1	Sequence 1, Appli
21	153	98.7	31	4	US-08-915-918A-1	Sequence 1, Appli
22	153	98.7	31	4	US-09-302-596-3	Sequence 3, Appli
23	153	98.7	31	4	US-08-472-349-2	Sequence 2, Appli
24	153	98.7	31	4	US-09-623-618B-2	Sequence 2, Appli
25	153	98.7	31	4	US-09-623-618B-17	Sequence 17, Appl
26	153	98.7	31	4	US-09-623-618B-27	Sequence 27, Appl
27	153	98.7	31	4	US-09-623-618B-28	Sequence 28, Appl
28	153	98.7	31	4	US-09-333-415-3	Sequence 3, Appli
29	153	98.7	31	5	PCT-US95-15800-28	Sequence 28, Appl
30	153	98.7	36	1	US-08-095-162-15	Sequence 15, Appl
31	153	98.7	36	1	US-08-470-220A-15	Sequence 15, Appl
32	153	98.7	36	2	US-08-808-825-9	Sequence 9, Appli
33	153	98.7	36	2	US-08-899-324-1	Sequence 1, Appli
34	153	98.7	36	3	US-08-967-374-15	Sequence 15, Appl
35	153	98.7	36	4	US-08-329-892B-1	Sequence 1, Appli
36	153	98.7	36	4	US-09-302-596-2	Sequence 2, Appli
37	153	98.7	36	4	US-08-472-349-6	Sequence 6, Appli
38	153	98.7	36	4	US-09-333-415-2	Sequence 2, Appli
39	153	98.7	36	5	PCT-US95-15800-24	Sequence 24, Appl
40	153	98.7	37	1	US-08-095-162-19	Sequence 19, Appl
41	153	98.7	37	1	US-08-470-220A-19	Sequence 19, Appl
42	153	98.7	37	2	US-08-807-263-2	Sequence 2, Appli
43	153	98.7	37	3	US-08-967-374-19	Sequence 19, Appl
44	153	98.7	37	4	US-09-302-596-1	Sequence 1, Appli
45	153	98.7	37	4	US-08-472-349-1	Sequence 1, Appli

ALIGNMENTS

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RESULT 1
US-08-066-480-6
; Sequence 6, Application US/08066480
; Patent No. 5424286
;  GENERAL INFORMATION:
;    APPLICANT:  Eng, John
;    TITLE OF INVENTION:  Pharmaceutical Compositions And Use of
;    TITLE OF INVENTION:  Exendin-3 and Exendin-4 for Treatment of Diabetes Mellitus
;    NUMBER OF SEQUENCES:  7
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Allegretti & Witcoff, Ltd.
;      STREET:  10 S. Wacker Drive
;      CITY:  Chicago
;      STATE:  Illinois
;      COUNTRY:  USA
;      ZIP:  60606
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/066,480
;      FILING DATE:  24-MAR-1993
;      CLASSIFICATION:  514
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  McDonnell, John J
;      REGISTRATION NUMBER:  26,949
;      REFERENCE/DOCKET NUMBER:  93,084
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  312-715-1000
;      TELEFAX:  312-715-1234
;  INFORMATION FOR SEQ ID NO:  6:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  30 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
;    FEATURE:
;      NAME/KEY:  Peptide
;      LOCATION:  1..30
;      OTHER INFORMATION:  /label= GLP-1-7-36
;      OTHER INFORMATION:  /note= "GLP-1(7-36) fragment"
US-08-065-480-6


  Query Match           98.7%;  Score 153;  DB 1;  Length 30;
  Best Local Similarity  96.7%;  Pred. No. 1.1e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;
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Db      1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30


RESULT   2
US-08-095-162-1
; Sequence 1, Application US/08095162
; Patent No. 5512459
;  GENERAL INFORMATION:
;    APPLICANT:  Wagner, Fred W.
;    APPLICANT:  Stout, Jay
;    APPLICANT:  Henriksen, Dennis
;    APPLICANT:  Partridge, Bruce
;    APPLICANT:  Manning, Shane
;    TITLE OF INVENTION:  Enzymatic Method for Modification of
;    TITLE OF INVENTION:  Recombinant Polypeptides
;    NUMBER OF SEQUENCES:  26
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Merchant & Gould
;      STREET:  3100 No. 5512459west Center
;      CITY:  Minneapolis
;      STATE:  MN
;      COUNTRY:  USA
;      ZIP:  55402
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/095,162
;      FILING DATE:  20-JUL-1993
;      CLASSIFICATION:  514
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Nelson, Albin J.
;      REGISTRATION NUMBER:  28,659
;      REFERENCE/DOCKET NUMBER:  8648.32-US01
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  612-332-5300
;      TELEFAX:  612-332-9081
;  INFORMATION FOR SEQ ID NO:  1:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  30 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
;    IMMEDIATE SOURCE:
;      CLONE:  GLP1 7-36-NH2  (Glucagon-like Peptide)
US-08-095-162-1


  Query Match             98.7%;  Score 153;  DB 1;  Length 30;
  Best Local Similarity   96.7%;  Pred. No. 1.1e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

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RESULT   3
US-08-470-220A-1
; Sequence 1, Application US/08470220A
; Patent No. 5707826
;  GENERAL INFORMATION:
;    APPLICANT:  Wagner, Fred W.
;    APPLICANT:  Stout, Jay
;    APPLICANT:  Henriksen, Dennis
;    APPLICANT:  Partridge, Bruce
;    APPLICANT:  Manning, Shane
;    TITLE OF INVENTION:  Enzymatic Method for Modification of
;    TITLE OF INVENTION:  Recombinant Polypeptides
;    NUMBER OF SEQUENCES:  26
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Merchant & Gould
;      STREET:  3100 No. 5707826west Center
;      CITY:  Minneapolis
;      STATE:  MN
;      COUNTRY:  USA
;      ZIP:  55402
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/470,220A
;      FILING DATE:  06-JUN-1995
;      CLASSIFICATION:  435
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/095,162
;      FILING DATE:  20-JUL-1993
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Nelson, Albin J.
;      REGISTRATION NUMBER:  28,659
;      REFERENCE/DOCKET NUMBER:  8648.32-US01
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  612-332-5300
;      TELEFAX:  612-332-9081
;  INFORMATION FOR SEQ ID NO:  1:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  30 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
;    IMMEDIATE SOURCE:
;      CLONE:  GLP1 7-36-NH2  (Glucagon-like Peptide)
US-08-470-220A-1


  Query Match             98.7%;  Score 153;  DB 1;  Length 30;
  Best Local Similarity   96.7%;  Pred. No. 1.1e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

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RESULT   4
US-08-927-227-1
; Sequence 1, Application US/08927227A
; Patent No. 5977071
; GENERAL INFORMATION:
;  APPLICANT: Galloway, James A.
;  APPLICANT: Hoffmann, James A.
;  TITLE OF INVENTION: GLUCAGON-LIKE INSULINOTROPIC PEPTIDE ANALGOGS,
;  TITLE OF INVENTION: COMPOSITIONS AND METHODS
;  FILE REFERENCE: X-9332B
;  CURRENT APPLICATION NUMBER: US/08/927,227A
;  CURRENT FILING DATE: 1997-09-10
;  NUMBER OF SEQ ID NOS: 1
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 1
;   LENGTH: 30
;   TYPE: PRT
;   ORGANISM: Homo sapiens
;   FEATURE:
;   OTHER INFORMATION: The arginine residue at position 30 is modified so
;   OTHER INFORMATION: as to replace the terminal carboxyl group with an
;   OTHER INFORMATION: amine.
US-08-927-227-1
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  Query Match           98.7%;  Score 153;  DB 2;  Length 30;
  Best Local Similarity  96.7%;  Pred. No. 1.1e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

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Db      1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30


RESULT   5
US-08-967-374-1
; Sequence 1, Application US/08967374
; Patent No. 6037143
;  GENERAL INFORMATION:
;    APPLICANT:  Wagner, Fred W.
;    APPLICANT:  Stout, Jay
;    APPLICANT:  Henriksen, Dennis
;    APPLICANT:  Partridge, Bruce
;    APPLICANT:  Manning, Shane
;    TITLE OF INVENTION:  Enzymatic Method for Modification of
;    TITLE OF INVENTION:  Recombinant Polypeptides
;    NUMBER OF SEQUENCES:  26
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Merchant & Gould
;      STREET:  3100 No. 6037143west Center
;      CITY:  Minneapolis
;      STATE:  MN
;      COUNTRY:  USA
;      ZIP:  55402
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/967,374
;      FILING DATE:
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/520,485
;      FILING DATE:  29-AUG-1995
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Carter, Charles G.
;      REGISTRATION NUMBER:  35,093
;      REFERENCE/DOCKET NUMBER:  8648.32-USD1
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  612-332-5300
;      TELEFAX:  612-332-9081
;  INFORMATION FOR SEQ ID NO:  1:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  30 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
;    IMMEDIATE SOURCE:
;      CLONE:  GLP1 7-36-NH2  (Glucagon-like Peptide)
US-08-967-374-1


  Query Match           98.7%;  Score 153;  DB 3;  Length 30;
  Best Local Similarity  96.7%;  Pred. No. 1.1e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

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Db      1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30


RESULT   6
US-09-348-136-1
; Sequence 1, Application US/09348136
; Patent No. 6133235
; GENERAL INFORMATION:
;  APPLICANT:  Galloway, James A.
;  APPLICANT:  Hoffmann, James A.
;  TITLE OF INVENTION:  GLUCAGON-LIKE INSULINOTROPIC PEPTIDE ANALGOGS,
;  TITLE OF INVENTION:  COMPOSITIONS AND METHODS
;  FILE REFERENCE:  X-9332B
;  CURRENT APPLICATION NUMBER:  US/09/348,136
;  CURRENT FILING DATE:  1999-07-06
;  PRIOR APPLICATION NUMBER:  US 08/927,227
;  PRIOR FILING DATE:  1997-09-10
;  NUMBER OF SEQ ID NOS:  1
;  SOFTWARE:  PatentIn Ver. 2.0
; SEQ ID NO 1
;  LENGTH:  30
;  TYPE:  PRT
;  ORGANISM:  Homo sapiens
;  FEATURE:
;  OTHER INFORMATION:  The arginine residue at position 30 is modified so
;  OTHER INFORMATION:  as to replace the terminal carboxyl group with an
;  OTHER INFORMATION:  amine.
US-09-348-136-1


  Query Match           98.7%;  Score 153;  DB 4;  Length 30;
  Best Local Similarity  96.7%;  Pred. No. 1.1e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

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Db      1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30


RESULT   7
US-08-961-405A-5
; Sequence 5, Application US/08961405A
; Patent No. 6191102
;  GENERAL INFORMATION:
;    APPLICANT:  DiMarchi, Richard D.
;    APPLICANT:  Efendic, Suad
;    TITLE OF INVENTION:  USE OF GLP-1 ANALOGS AND DERIVATIVES
;    TITLE OF INVENTION:  ADMINISTERED PERIPHERALLY IN REGULATION OF OBESITY
;    NUMBER OF SEQUENCES:  9
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  BARNES & THORNBURG
;      STREET:  200 W. Madison, Suite 2601
;      CITY:  Chicago
;      STATE:  Illinois
;      COUNTRY:  USA
;      ZIP:  60606
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/961,405A
;      FILING DATE:  30-OCT-1997
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 60/030,213
;      FILING DATE:  05-NOV-1996
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Martin, Alice O.
;      REGISTRATION NUMBER:  35,601
;      REFERENCE/DOCKET NUMBER:  3051/90264
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  312-357-1313
;      TELEFAX:  312-759-5646
;  INFORMATION FOR SEQ ID NO:  5:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  30 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
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US-08-961-405A-5

Query Match 98.7%; Score 153; DB 4; Length 30;
Best Local Similarity 96.7%; Pred. No. 1.1e-15;
Matches 29; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

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Db 1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30

RESULT 8
US-08-915-918A-5
; Sequence 5, Application US/08915918A
; Patent No. 6277819
; GENERAL INFORMATION:
; APPLICANT: Efendic, Suad
; TITLE OF INVENTION: USE OF GLP-1 OR ANALOGS IN TREATMENT OF
; TITLE OF INVENTION: MYOCARDIAL INFARCTION
; NUMBER OF SEQUENCES: 6
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: BRINKS, HOFER, GILSON & LIONE
; STREET: NBC Tower - Suite 3600, 455 N. Cityfront
; STREET: Plaza Drive
; CITY: Chicago
; STATE: Illinois
; COUNTRY: USA
; ZIP: 60611-5599
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/915,918A
; FILING DATE: 21-AUG-1997
; CLASSIFICATION: 514
; ATTORNEY/AGENT INFORMATION:
; NAME: Martin, Alice O.
; REGISTRATION NUMBER: 35,601
; REFERENCE/DOCKET NUMBER: 8792/28
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 312-321-4200
; TELEFAX: 312-321-4299
; INFORMATION FOR SEQ ID NO: 5:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 30 amino acids
; TYPE: amino acid
; STRANDEDNESS:
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
US-08-915-918A-5

Query Match 98.7%; Score 153; DB 4; Length 30;
Best Local Similarity 96.7%; Pred. No. 1.1e-15;
Matches 29; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

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Db 1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30

RESULT 9
US-09-302-596-4
; Sequence 4, Application US/09302596
; Patent No. 6284725
; GENERAL INFORMATION:
; APPLICANT: Coolidge, Thomas R.
; APPLICANT: Ehlers, Mario R.W.
; TITLE OF INVENTION: Metabolic Intervention with GLP-1 to Improve the Function of
; TITLE OF INVENTION: Ischemic and Reperfused Tissue
; FILE REFERENCE: P03660US1
; CURRENT APPLICATION NUMBER: US/09/302,596
; CURRENT FILING DATE: 1999-04-30
; PRIOR APPLICATION NUMBER: 60/103,498
; PRIOR FILING DATE: 1998-10-08
; NUMBER OF SEQ ID NOS: 13
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 4
; LENGTH: 30
; TYPE: PRT
; ORGANISM: mammalian
US-09-302-596-4

Query Match 98.7%; Score 153; DB 4; Length 30;
Best Local Similarity 96.7%; Pred. No. 1.1e-15;
Matches 29; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

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Db 1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30

RESULT 10
US-08-472-349-3
; Sequence 3, Application US/08472349
; Patent No. 6284727
; GENERAL INFORMATION:
; APPLICANT: Kim, Yesook
; APPLICANT: Lambert, William J.
; APPLICANT: Qi, Hong
; APPLICANT: Gelfand, Robert A.
; APPLICANT: Geoghegan, Kieran F.
; APPLICANT: Danley, Dennis E.
; TITLE OF INVENTION: Prolonged Delivery of Peptides
; NUMBER OF SEQUENCES: 7
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Pfizer Inc
; STREET: 235 East 42nd Street, 20th Floor
; CITY: New York
; STATE: New York
; COUNTRY: U.S.A.
; ZIP: 10017-5755
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/472,349
; FILING DATE:
; CLASSIFICATION: 514
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US/08/181,655
; FILING DATE:
; ATTORNEY/AGENT INFORMATION:
; NAME: Sheyka, Robert F.
; REGISTRATION NUMBER: 31,304
; REFERENCE/DOCKET NUMBER: PC8391
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (212)573-1189
; TELEFAX: (212)573-1939
; TELEX: N/A
; INFORMATION FOR SEQ ID NO: 3:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 30 amino acids
; TYPE: amino acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
; HYPOTHETICAL: NO
; ANTI-SENSE: NO
; FRAGMENT TYPE: N-terminal

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;    ORIGINAL SOURCE:
;      ORGANISM:  N/A
;      STRAIN:  N/A
;      INDIVIDUAL ISOLATE:  N/A
;      HAPLOTYPE:  N/A
;      CELL LINE:  N/A
;    IMMEDIATE SOURCE:
;      LIBRARY:  N/A
;      CLONE:  N/A
;    POSITION IN GENOME:
;      CHROMOSOME/SEGMENT:  N/A
;      MAP POSITION:  N/A
;      UNITS:  N/A
US-08-472-349-3


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  Best Local Similarity   96.7%;  Pred. No. 1.1e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

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RESULT  11
US-09-333-415-4
; Sequence 4, Application US/09333415
; Patent No. 6344180
; GENERAL INFORMATION:
;  APPLICANT:  Holst, Jens J.
;  APPLICANT:  Vilsboll, Tina
;  TITLE OF INVENTION:  GLP-1 as a Diagnostic Test to Determine Beta-Cell
;  TITLE OF INVENTION:  Function and the Presence of the Condition of IGT and
;  TITLE OF INVENTION:  Type-II Diabetes
;  FILE REFERENCE:  P03987US0
;  CURRENT APPLICATION NUMBER: US/09/333,415
;  CURRENT FILING DATE:  1999-06-15
;  NUMBER OF SEQ ID NOS:  13
;  SOFTWARE:  PatentIn Ver. 2.0
; SEQ ID NO 4
;   LENGTH: 30
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-09-333-415-4


  Query Match             98.7%;  Score 153;  DB 4;  Length 30;
  Best Local Similarity   96.7%;  Pred. No. 1.1e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

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Db      1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30


RESULT  12
US-09-585-181A-4
; Sequence 4, Application US/09585181A
; Patent No. 6358924
; GENERAL INFORMATION:
;  APPLICANT: Hoffmann, James
;  TITLE OF INVENTION: GLP-1 FORMULATIONS
;  FILE REFERENCE: X-11368
;  CURRENT APPLICATION NUMBER: US/09/585,181A
;  CURRENT FILING DATE:  2001-08-22
;  PRIOR APPLICATION NUMBER: US 60/067,600
;  PRIOR FILING DATE: 1997-12-05
;  NUMBER OF SEQ ID NOS: 5
;  SOFTWARE: PatentIn version 3.1
; SEQ ID NO 4
;   LENGTH: 30
;   TYPE: PRT
;   ORGANISM: Homo sapiens
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (30)..(30)
;   OTHER INFORMATION: AMIDATION
US-09-585-181A-4


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  Best Local Similarity   96.7%;  Pred. No. 1.1e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
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Db      1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30


RESULT  13
PCT-US95-15800-27
; Sequence 27, Application PC/TUS9515800
;  GENERAL INFORMATION:
;    APPLICANT:  BioNebraska, Inc.
;    TITLE OF INVENTION:  PRODUCTION OF PEPTIDES USING
;    TITLE OF INVENTION:  RECOMBINANT FUSION PROTEIN CONSTRICTS
;    NUMBER OF SEQUENCES:  33
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Merchant & Gould
;      STREET:  3100 Norwest Center, 90 S. 7th Street
;      CITY:  Minneapolis
;      STATE:  MN
;      COUNTRY:  U.S.A.
;      ZIP:  55402
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Diskette
;      COMPUTER:  IBM Compatible
;      OPERATING SYSTEM:  DOS
;      SOFTWARE:  FastSEQ Version 1.5
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  PCT/US95/15800
;      FILING DATE:  07-DEC-1995
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/350,530
;      FILING DATE:  07-DEC-1994
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Carter, Charles G
;      REGISTRATION NUMBER:  35,093
;      REFERENCE/DOCKET NUMBER:  8648.45USWO
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  612/332-5300
;      TELEFAX:  612/332-9081
;      TELEX:
;  INFORMATION FOR SEQ ID NO:  27:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  30 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
;    HYPOTHETICAL:  NO
;    ANTI-SENSE:  NO
;    FRAGMENT TYPE:  internal
;    ORIGINAL SOURCE:
PCT-US95-15800-27


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  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

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Db      1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30
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RESULT 14
US-09-025-951-1
; Sequence 1, Application US/09025951
; Patent No. RE37302
;  GENERAL INFORMATION:
;    APPLICANT:  KIRK, Ole
;    TITLE OF INVENTION:  USE OF A PEPTIDE
;    NUMBER OF SEQUENCES:  1
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  No. RE37302o No. RE37302disk of No. RE37302th America, Inc.
;      STREET:  405 Lexington Avenue, 64th Floor
;      CITY:  New York
;      STATE:  New York
;      COUNTRY:  USA
;      ZIP:  10174-6401
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/09/025,951
;      FILING DATE:
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/295,913
;      FILING DATE:
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Lowney Dr., Karen A.
;      REGISTRATION NUMBER:  31,274
;      REFERENCE/DOCKET NUMBER:  3745.204-US
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  212-867-0123
;      TELEFAX:  212-878-9655
;  INFORMATION FOR SEQ ID NO:  1:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  31 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    FEATURE:
;      NAME/KEY:  Modified-site
;      LOCATION:  31
;      OTHER INFORMATION:  /note= "NH2 or Gly-OH"
US-09-025-951-1


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  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

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Db      1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30


RESULT 15
US-08-095-162-3
; Sequence 3, Application US/08095162
; Patent No. 5512459
;  GENERAL INFORMATION:
;    APPLICANT:  Wagner, Fred W.
;    APPLICANT:  Stout, Jay
;    APPLICANT:  Henriksen, Dennis
;    APPLICANT:  Partridge, Bruce
;    APPLICANT:  Manning, Shane
;    TITLE OF INVENTION:  Enzymatic Method for Modification of
;    TITLE OF INVENTION:  Recombinant Polypeptides
;    NUMBER OF SEQUENCES:  26
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Merchant & Gould
;      STREET:  3100 No. 5512459west Center
;      CITY:  Minneapolis
;      STATE:  MN
;      COUNTRY:  USA
;      ZIP:  55402
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/095,162
;      FILING DATE:  20-JUL-1993
;      CLASSIFICATION:  514
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Nelson, Albin J.
;      REGISTRATION NUMBER:  28,659
;      REFERENCE/DOCKET NUMBER:  8648.32-US01
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  612-332-5300
;      TELEFAX:  612-332-9081
;  INFORMATION FOR SEQ ID NO:  3:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  31 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
;    IMMEDIATE SOURCE:
;      CLONE:  GLP1 (7-36)-Gly
US-08-095-162-3


  Query Match             98.7%;  Score 153;  DB 1;  Length 31;
  Best Local Similarity   96.7%;  Pred. No. 1.1e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

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Db      1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30


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GenCore version 4.5

OM protein - protein search, using sw model

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(without alignments)
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Perfect score: 155
Sequence: 1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30

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Maximum Match 100%
Listing first 45 summaries

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26: /cgn2_6/ptodata/2/paa/US60_COMB.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
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2	153	98.7	30	3	US-07-899-073-3	Sequence 3, Appli
3	153	98.7	30	4	US-08-044-133-3	Sequence 3, Appli
4	153	98.7	30	7	US-08-302-855-1	Sequence 1, Appli
5	153	98.7	30	7	US-08-350-528-53	Sequence 53, Appl
6	153	98.7	30	7	US-08-350-530A-27	Sequence 27, Appl
7	153	98.7	30	7	US-08-356-231-3	Sequence 3, Appli
8	153	98.7	30	9	US-08-520-485-1	Sequence 1, Appli
9	153	98.7	30	13	US-08-908-867-3	Sequence 3, Appli
10	153	98.7	30	13	US-08-908-867A-3	Sequence 3, Appli
11	153	98.7	30	13	US-08-908-867-3	Sequence 3, Appli
12	153	98.7	30	13	US-08-934-171-53	Sequence 53, Appl
13	153	98.7	30	16	US-09-206-601-1	Sequence 1, Appli
14	153	98.7	30	16	US-09-206-601-18	Sequence 18, Appl
15	153	98.7	30	16	US-09-206-601-21	Sequence 21, Appl
16	153	98.7	30	16	US-09-206-833-1	Sequence 1, Appli
17	153	98.7	30	16	US-09-206-833-3	Sequence 3, Appli
18	153	98.7	30	16	US-09-209-799D-10	Sequence 10, Appl
19	153	98.7	30	16	US-09-212-663-4	Sequence 4, Appli
20	153	98.7	30	17	US-09-303-016-4	Sequence 4, Appli
21	153	98.7	30	17	US-09-341-590-118	Sequence 118, App
22	153	98.7	30	18	US-09-400-802A-4	Sequence 4, Appli
23	153	98.7	30	19	US-09-505-991-1	Sequence 1, Appli
24	153	98.7	30	19	US-09-561-226-3	Sequence 3, Appli
25	153	98.7	30	19	US-09-573-809-1	Sequence 1, Appli
26	153	98.7	30	19	US-09-585-186-5	Sequence 5, Appli
27	153	98.7	30	20	US-09-614-847-114	Sequence 114, App
28	153	98.7	30	20	US-09-656-121-11	Sequence 11, Appl
29	153	98.7	30	20	US-09-657-276-344	Sequence 344, App
30	153	98.7	30	20	US-09-657-276-355	Sequence 355, App
31	153	98.7	30	21	US-09-719-410-4	Sequence 4, Appli
32	153	98.7	30	21	US-09-762-538-1	Sequence 1, Appli
33	153	98.7	30	22	US-09-805-507-4	Sequence 4, Appli
34	153	98.7	30	22	US-09-830-323-1	Sequence 1, Appli
35	153	98.7	30	22	US-09-834-229A-5	Sequence 5, Appli
36	153	98.7	30	22	US-09-851-738-4	Sequence 4, Appli
37	153	98.7	30	22	US-09-857-636-1	Sequence 1, Appli
38	153	98.7	30	22	US-09-859-804-4	Sequence 4, Appli
39	153	98.7	30	23	US-09-953-021-4	Sequence 4, Appli
40	153	98.7	30	23	US-09-975-905-1	Sequence 1, Appli
41	153	98.7	30	23	US-09-982-978-4	Sequence 4, Appli
42	153	98.7	30	23	US-09-997-792-10	Sequence 10, Appl
43	153	98.7	30	24	US-10-072-540-4	Sequence 4, Appli
44	153	98.7	30	24	US-10-091-258-4	Sequence 4, Appli
45	153	98.7	30	24	US-10-097-230-3	Sequence 3, Appli

ALIGNMENTS

RESULT 1
PCT-US98-25515-4
; Sequence 4, Application PC/TUS9825515
; GENERAL INFORMATION:
; APPLICANT: Hoffmann, James A.
; TITLE OF INVENTION: GLP-1 FORMULATIONS
; FILE REFERENCE: X-11368
; CURRENT APPLICATION NUMBER: PCT/US98/25515
; CURRENT FILING DATE: 1998-12-02
; EARLIER APPLICATION NUMBER: US60/067,600
; EARLIER FILING DATE: 1997-12-05
; NUMBER OF SEQ ID NOS: 5
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 4
; LENGTH: 30
; TYPE: PRT
; ORGANISM: Homo sapiens
; FEATURE:
; OTHER INFORMATION: Arg at position 30 is C-terminally amidated.
PCT-US98-25515-4

Query Match 98.7%; Score 153; DB 1; Length 30;
Best Local Similarity 96.7%; Pred. No. 3.7e-15;
Matches 29; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

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Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           ||||||||||||||||||||||:|||||||
Db       1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30
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RESULT   2
US-07-899-073-3
; Sequence 3, Application US/07899073
;  GENERAL INFORMATION:
;     APPLICANT:  Andrews, Glenn C.
;     APPLICANT:  Daumy, Gaston O.
;     APPLICANT:  Francoeur, Michael L.
;     APPLICANT:  Larson, Eric R.
;     TITLE OF INVENTION:  GLUCAGON-LIKE PEPTIDE AND INSULINOTROPIN
;     TITLE OF INVENTION:  DERIVATIVES
;     NUMBER OF SEQUENCES:  6
;     CORRESPONDENCE ADDRESS:
;       ADDRESSEE:  Gregg C. Benson, Pfizer Inc
;       STREET:  Eastern Point Road
;       CITY:  Groton
;       STATE:  CT
;       COUNTRY:  USA
;       ZIP:  06340
;     COMPUTER READABLE FORM:
;       MEDIUM TYPE:  Floppy disk
;       COMPUTER:  IBM PC compatible
;       OPERATING SYSTEM:  PC-DOS/MS-DOS
;       SOFTWARE:  PatentIn Release #1.0, Version #1.25
;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  US/07/899,073
;       FILING DATE:  19920615
;       CLASSIFICATION:  514
;     ATTORNEY/AGENT INFORMATION:
;       NAME:  Benson, Gregg C.
;       REGISTRATION NUMBER:  30,997
;       REFERENCE/DOCKET NUMBER:  PC8156GCB
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  (203) 441-4901
;       TELEFAX:  (203) 441-5221
;   INFORMATION FOR SEQ ID NO:  3:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  30 amino acids
;       TYPE:  AMINO ACID
;       TOPOLOGY:  linear
;     MOLECULE TYPE:  peptide
US-07-899-073-3


  Query Match             98.7%;  Score 153;  DB 3;  Length 30;
  Best Local Similarity   96.7%;  Pred. No. 3.7e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           |||||||||||||||||||||:|||||||
Db       1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30


RESULT   3
US-08-044-133-3
; Sequence 3, Application US/08044133
;  GENERAL INFORMATION:
;     APPLICANT:  Kim, Yesook
;     APPLICANT:  Lambert, William J.
;     APPLICANT:  Qi, Hong
;     APPLICANT:  Gelfand, Robert A.
;     APPLICANT:  Geoghegan, Kieran F.
;     APPLICANT:  Danley, Dennis E.
;     TITLE OF INVENTION:  Prolonged Delivery of Peptides
;     NUMBER OF SEQUENCES:  7
;     CORRESPONDENCE ADDRESS:
;       ADDRESSEE:  Pfizer Inc
;       STREET:  235 East 42nd Street, 20th Floor
;       CITY:  New York
;       STATE:  New York
;       COUNTRY:  U.S.A.
;       ZIP:  10017-5755
;     COMPUTER READABLE FORM:
;       MEDIUM TYPE:  Floppy disk
;       COMPUTER:  IBM PC compatible
;       OPERATING SYSTEM:  PC-DOS/MS-DOS
;       SOFTWARE:  PatentIn Release #1.0, Version #1.25
;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  US/08/044,133
;       FILING DATE:  07-APR-1993
;       CLASSIFICATION:  514
;     ATTORNEY/AGENT INFORMATION:
;       NAME:  Sheyka, Robert F.
;       REGISTRATION NUMBER:  31,304
;       REFERENCE/DOCKET NUMBER:  PC8391
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  (212)573-1189
;       TELEFAX:  (212)573-1939
;       TELEX:  N/A
;   INFORMATION FOR SEQ ID NO:  3:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  30 amino acids
;       TYPE:  amino acid
;       STRANDEDNESS:  single
;       TOPOLOGY:  linear
;     MOLECULE TYPE:  peptide
;     HYPOTHETICAL:  NO
;     ANTI-SENSE:  NO
;     FRAGMENT TYPE:  N-terminal
;     ORIGINAL SOURCE:
;       ORGANISM:  N/A
;       STRAIN:  N/A
;       INDIVIDUAL ISOLATE:  N/A
;       HAPLOTYPE:  N/A
;       CELL LINE:  N/A
;     IMMEDIATE SOURCE:
;       LIBRARY:  N/A
;       CLONE:  N/A
;     POSITION IN GENOME:
;       CHROMOSOME/SEGMENT:  N/A
;       MAP POSITION:  N/A
;       UNITS:  N/A
US-08-044-133-3


  Query Match             98.7%;  Score 153;  DB 4;  Length 30;
  Best Local Similarity   96.7%;  Pred. No. 3.7e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           |||||||||||||||||||||:|||||||
Db       1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30


RESULT   4
US-08-302-855-1
; Sequence 1, Application US/08302855
;  GENERAL INFORMATION:
;     APPLICANT:  Kirk, Ole
;     APPLICANT:  Pridal, Lone
;     TITLE OF INVENTION:  NOVEL MEDICAMENT
;     NUMBER OF SEQUENCES:  1
;     CORRESPONDENCE ADDRESS:
;       ADDRESSEE:  Novo Nordisk of North America, Inc.
;       STREET:  405 Lexington Avenue, 64th Floor
;       CITY:  New York
;       STATE:  New York
;       COUNTRY:  United States of America
;       ZIP:  10174-6401
;     COMPUTER READABLE FORM:
;       MEDIUM TYPE:  Floppy disk
;       COMPUTER:  IBM PC compatible
;       OPERATING SYSTEM:  PC-DOS/MS-DOS
;       SOFTWARE:  PatentIn Release #1.0, Version #1.30
;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  US/08/302,855
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;       FILING DATE:  16-SEP-1994
;       CLASSIFICATION:  530
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  DK PCT/DK93/00098
;       FILING DATE:  18-MAR-1993
;     ATTORNEY/AGENT INFORMATION:
;       NAME:  Lambiris, Elias J.
;       REGISTRATION NUMBER:  33,728
;       REFERENCE/DOCKET NUMBER:  3746.204-US
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  212-867-0123
;       TELEFAX:  212-878-9655
;   INFORMATION FOR SEQ ID NO:  1:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  30 amino acids
;       TYPE:  amino acid
;       STRANDEDNESS:  single
;       TOPOLOGY:  linear
;     MOLECULE TYPE:  peptide
US-08-302-855-1


  Query Match             98.7%;  Score 153;  DB 7;  Length 30;
  Best Local Similarity   96.7%;  Pred. No. 3.7e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           |||||||||||||||||||||||:|||||||
Db       1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30


RESULT   5
US-08-350-528-53
; Sequence 53, Application US/08350528
;  GENERAL INFORMATION:
;     APPLICANT:  Stout, Jay
;     APPLICANT:  Partridge, Bruce
;     APPLICANT:  Henriksen, Dennis
;     APPLICANT:  Holmquist, Barton
;     APPLICANT:  Wagner, Fred
;     TITLE OF INVENTION:  PRODUCTION OF C-TERMINAL AMIDATED PEPTIDES FROM RECOMB
;     NUMBER OF SEQUENCES:  63
;     CORRESPONDENCE ADDRESS:
;       ADDRESSEE:  Merchant & Gould
;       STREET:  3100 Norwest
;       CITY:  Mpls
;       STATE:  MN
;       COUNTRY:  USA
;       ZIP:  55402
;     COMPUTER READABLE FORM:
;       MEDIUM TYPE:  Diskette
;       COMPUTER:  IBM Compatible
;       OPERATING SYSTEM:  DOS
;       SOFTWARE:  FastSEQ Version 1.5
;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  US/08/350,528
;       FILING DATE:  07-DEC-1994
;       CLASSIFICATION:  435
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:
;       FILING DATE:
;     ATTORNEY/AGENT INFORMATION:
;       NAME:  Carter, Charles G
;       REGISTRATION NUMBER:  35,093
;       REFERENCE/DOCKET NUMBER:  8648.43US01
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  332-5300
;       TELEFAX:
;       TELEX:
;   INFORMATION FOR SEQ ID NO:  53:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  30 amino acids
;       TYPE:  amino acid
;       STRANDEDNESS:  single
;       TOPOLOGY:  linear
;     MOLECULE TYPE:  peptide
;     HYPOTHETICAL:  NO
;     ANTI-SENSE:  NO
;     FRAGMENT TYPE:  internal
;     ORIGINAL SOURCE:
US-08-350-528-53


  Query Match             98.7%;  Score 153;  DB 7;  Length 30;
  Best Local Similarity   96.7%;  Pred. No. 3.7e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           |||||||||||||||||||||||:|||||||
Db       1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30


RESULT   6
US-08-350-530A-27
; Sequence 27, Application US/08350530A
;  GENERAL INFORMATION:
;     APPLICANT:  Patridge, Bruce
;     APPLICANT:  Stout, Jay
;     APPLICANT:  Henriksen, Dennis
;     APPLICANT:  Manning, Shane
;     APPLICANT:  De La Motta, Rebecca
;     APPLICANT:  Holmquist, Barton
;     APPLICANT:  Wagner, Fred
;     TITLE OF INVENTION:  PRODUCTION OF PEPTIDE USING RECOMBINANT
;     TITLE OF INVENTION:  FUSION PROTEIN CONSTRUCTS
;     NUMBER OF SEQUENCES:  33
;     CORRESPONDENCE ADDRESS:
;       ADDRESSEE:  Merchant & Gould
;       STREET:  3100 Norwest Center, 90 S. 7th Street
;       CITY:  Minneapolis
;       STATE:  MN
;       COUNTRY:  U.S.A.
;       ZIP:  55402
;     COMPUTER READABLE FORM:
;       MEDIUM TYPE:  Diskette
;       COMPUTER:  IBM Compatible
;       OPERATING SYSTEM:  DOS
;       SOFTWARE:  FastSEQ Version 1.5
;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  US/08/350,530A
;       FILING DATE:  07-DEC-1994
;       CLASSIFICATION:  435
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:
;       FILING DATE:
;     ATTORNEY/AGENT INFORMATION:
;       NAME:  Carter, Charles G
;       REGISTRATION NUMBER:  35,093
;       REFERENCE/DOCKET NUMBER:  8648.45US01
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  612/332-5300
;       TELEFAX:  612/332-9081
;       TELEX:
;   INFORMATION FOR SEQ ID NO:  27:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  30 amino acids
;       TYPE:  amino acid
;       STRANDEDNESS:  single
;       TOPOLOGY:  linear
;     MOLECULE TYPE:  peptide
;     HYPOTHETICAL:  NO
;     ANTI-SENSE:  NO
;     FRAGMENT TYPE:  internal
;     ORIGINAL SOURCE:
US-08-350-530A-27
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  Query Match             98.7%;  Score 153;  DB 7;  Length 30;
  Best Local Similarity   96.7%;  Pred. No. 3.7e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           |||||||||||||||||||||||:|||||||
Db       1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30


RESULT   7
US-08-356-231-3
; Sequence 3, Application US/08356231
;  GENERAL INFORMATION:
;     APPLICANT:  Andrews, Glenn C.
;     APPLICANT:  Daumy, Gaston O.
;     APPLICANT:  Francoeur, Michael L.
;     APPLICANT:  Larson, Eric R.
;     APPLICANT:  Pfizer Inc, (Non-US)
;     TITLE OF INVENTION:  GLUCAGON-LIKE PEPTIDE AND INSULINOTROPIN
;     TITLE OF INVENTION:  DERIVATIVES
;     NUMBER OF SEQUENCES:  6
;     CORRESPONDENCE ADDRESS:
;       ADDRESSEE:  Gregg C. Benson, Pfizer Inc
;       STREET:  Eastern Point Road
;       CITY:  Groton
;       STATE:  CT
;       COUNTRY:  USA
;       ZIP:  06340
;     COMPUTER READABLE FORM:
;       MEDIUM TYPE:  Floppy disk
;       COMPUTER:  IBM PC compatible
;       OPERATING SYSTEM:  PC-DOS/MS-DOS
;       SOFTWARE:  PatentIn Release #1.0, Version #1.25
;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  US/08/356,231
;       FILING DATE:
;       CLASSIFICATION:  514
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  US 07/899,073
;       FILING DATE:  15-JUN-1992
;     ATTORNEY/AGENT INFORMATION:
;       NAME:  Benson, Gregg C.
;       REGISTRATION NUMBER:  30,997
;       REFERENCE/DOCKET NUMBER:  PC8156AGCB
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  (203) 441-4901
;       TELEFAX:  (203) 441-5221
;   INFORMATION FOR SEQ ID NO:  3:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  30 amino acids
;       TYPE:  amino acid
;       TOPOLOGY:  linear
;     MOLECULE TYPE:  peptide
US-08-356-231-3


  Query Match             98.7%;  Score 153;  DB 7;  Length 30;
  Best Local Similarity   96.7%;  Pred. No. 3.7e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           |||||||||||||||||||||||:|||||||
Db       1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30


RESULT   8
US-08-520-485-1
; Sequence 1, Application US/08520485
;  GENERAL INFORMATION:
;     APPLICANT:  Wagner, Fred W.
;     APPLICANT:  Stout, Jay
;     APPLICANT:  Henriksen, Dennis
;     APPLICANT:  Partridge, Bruce
;     APPLICANT:  Manning, Shane
;     TITLE OF INVENTION:  Enzymatic Method for Modification of
;     NUMBER OF SEQUENCES:  26
;     CORRESPONDENCE ADDRESS:
;       ADDRESSEE:  Merchant & Gould
;       STREET:  3100 Norwest Center
;       CITY:  Minneapolis
;       STATE:  MN
;       COUNTRY:  USA
;       ZIP:  55402
;     COMPUTER READABLE FORM:
;       MEDIUM TYPE:  Floppy disk
;       COMPUTER:  IBM PC compatible
;       OPERATING SYSTEM:  PC-DOS/MS-DOS
;       SOFTWARE:  PatentIn Release #1.0, Version #1.30
;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  US/08/520,485
;       FILING DATE:  29-AUG-1995
;       CLASSIFICATION:  435
;     ATTORNEY/AGENT INFORMATION:
;       NAME:  Carter, Charles G.
;       REGISTRATION NUMBER:  35,093
;       REFERENCE/DOCKET NUMBER:  8648.32-USD1
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  612-332-5300
;       TELEFAX:  612-332-9081
;   INFORMATION FOR SEQ ID NO:  1:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  30 amino acids
;       TYPE:  amino acid
;       TOPOLOGY:  linear
;     MOLECULE TYPE:  peptide
;     IMMEDIATE SOURCE:
;       CLONE:  GLP1 7-36-NH2  (Glucagon-like Peptide)
US-08-520-485-1


  Query Match             98.7%;  Score 153;  DB 9;  Length 30;
  Best Local Similarity   96.7%;  Pred. No. 3.7e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           |||||||||||||||||||||||:|||||||
Db       1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30


RESULT   9
US-08-908-867-3
; Sequence 3, Application US/08908867
;  GENERAL INFORMATION:
;     APPLICANT:  YOUNG, Andrew A.
;     APPLICANT:  GEDULIN, Bronislava
;     APPLICANT:  BEELEY, Nigel Robert Arnold
;     APPLICANT:  PRICKETT, Kathryn S.
;     TITLE OF INVENTION:  METHODS FOR REGULATING
;     TITLE OF INVENTION:  GASTROINTESTINAL MOTIITY
;     NUMBER OF SEQUENCES:  37
;     CORRESPONDENCE ADDRESS:
;       ADDRESSEE:  LYON & LYON
;       STREET:  633 WEST FIFTH STREET
;       CITY:  LOS ANGELES
;       STATE:  CALIFORNIA
;       COUNTRY:  USA
;       ZIP:  90017
;     COMPUTER READABLE FORM:
;       MEDIUM TYPE:  Floppy disk
;       COMPUTER:  IBM PC compatible
;       OPERATING SYSTEM:  PC-DOS/MS-DOS
;       SOFTWARE:  PatentIn Release #1.0, Version #1.25
;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  US/08/908,867
;       FILING DATE:  08-AUGUST-1997
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;      CLASSIFICATION:  514
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/694,954
;      FILING DATE:  08-AUGUST-1996
;      CLASSIFICATION:  514
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  DUFT, BRADFORD J.
;      REGISTRATION NUMBER:  32,219
;      REFERENCE/DOCKET NUMBER:  227/166
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  619/552-2200
;      TELEFAX:  213/955-0440
;      TELEX:  67-3510
;  INFORMATION FOR SEQ ID NO:  3:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  30 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
;    FEATURE:
;      LOCATION:  30
;      OTHER INFORMATION:  amidated Arg (Argininеamide)
US-08-908-867-3


  Query Match             98.7%;  Score 153;  DB 13;  Length 30;
  Best Local Similarity   96.7%;  Pred. No. 3.7e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           ||||||||||||||||||||||:|||||||
Db       1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30


RESULT  10
US-08-908-867A-3
; Sequence 3, Application US/08908867A
;  GENERAL INFORMATION:
;    APPLICANT:  YOUNG, Andrew A.
;    APPLICANT:  GEDULIN, Bronislava
;    APPLICANT:  BEELEY, Nigel Robert Arnold
;    APPLICANT:  PRICKETT, Kathryn S.
;    TITLE OF INVENTION:  METHODS FOR REGULATING
;    TITLE OF INVENTION:  GASTROINTESTINAL MOTILITY
;    NUMBER OF SEQUENCES:  37
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  LYON & LYON
;      STREET:  633 WEST FIFTH STREET
;      CITY:  LOS ANGELES
;      STATE:  CALIFORNIA
;      COUNTRY:  USA
;      ZIP:  90017.
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/908,867A
;      FILING DATE:  08-AUGUST-1997
;      CLASSIFICATION:  514
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/694,954
;      FILING DATE:  08-AUGUST-1996
;      CLASSIFICATION:  514
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  DUFT, BRADFORD J.
;      REGISTRATION NUMBER:  32,219
;      REFERENCE/DOCKET NUMBER:  227/166
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  619/552-2200
;      TELEFAX:  213/955-0440
;      TELEX:  67-3510
;  INFORMATION FOR SEQ ID NO:  3:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  30 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
;    FEATURE:
;      LOCATION:  30
;      OTHER INFORMATION:  amidated Arg (Argininеamide)
US-08-908-867A-3


  Query Match             98.7%;  Score 153;  DB 13;  Length 30;
  Best Local Similarity   96.7%;  Pred. No. 3.7e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
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Db       1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30


RESULT  11
US-08-908-867-3
; Sequence 3, Application US/08908867B
;  GENERAL INFORMATION:
;    APPLICANT:  YOUNG, ANDREW A.
;                GEDULIN, BRONISLAVA
;                BEELEY, NIGEL ROBERT ARNOLD
;                PRICKETT, KATHRYN S.
;    TITLE OF INVENTION:  METHODS FOR REGULATING
;                         GASTROINTESTINAL MOTIITY
;    NUMBER OF SEQUENCES:  39
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  LYON & LYON
;      STREET:  633 WEST FIFTH STREET
;      CITY:  LOS ANGELES
;      STATE:  CALIFORNIA
;      COUNTRY:  USA
;      ZIP:  90017
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/908,867B
;      FILING DATE:  08-Aug-1997
;      CLASSIFICATION:  Pending
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/694,954
;      FILING DATE:  08-AUGUST-1996
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  BERKMAN, CHARLES S.
;      REGISTRATION NUMBER:  38,077
;      REFERENCE/DOCKET NUMBER:  227/166
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  619/552-2200
;      TELEFAX:  213/955-0440
;      TELEX:  67-3510
;  INFORMATION FOR SEQ ID NO:  3:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  30 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
;    FEATURE:
;      LOCATION:  30
;      OTHER INFORMATION:  amidated Arg (Argininеamide)
;    SEQUENCE DESCRIPTION:  SEQ ID NO:  3:
US-08-908-867-3
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  Query Match             98.7%;  Score 153;  DB 13;  Length 30;
  Best Local Similarity   96.7%;  Pred. No. 3.7e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

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Db       1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30


RESULT  12
US-08-934-171-53
; Sequence 53, Application US/08934171
;  GENERAL INFORMATION:
;    APPLICANT:  Stout, Jay
;    APPLICANT:  Partridge, Bruce
;    APPLICANT:  Henriksen, Dennis
;    APPLICANT:  Holmquist, Barton
;    APPLICANT:  Wagner, Fred
;    TITLE OF INVENTION:  PRODUCTION OF C-TERMINAL AMIDATED
;    TITLE OF INVENTION:  PEPTIDES FROM RECOMBINANT PROTEIN CS
;    NUMBER OF SEQUENCES:  63
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Merchant & Gould
;      STREET:  3100 Norwest
;      CITY:  Mpls
;      STATE:  MN
;      COUNTRY:  USA
;      ZIP:  55402
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Diskette
;      COMPUTER:  IBM Compatible
;      OPERATING SYSTEM:  DOS
;      SOFTWARE:  FastSEQ Version 1.5
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/934,171
;      FILING DATE:
;      CLASSIFICATION:  435
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/350,528
;      FILING DATE:  07-DEC-1994
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Carter, Charles G
;      REGISTRATION NUMBER:  35,093
;      REFERENCE/DOCKET NUMBER:  8648.43US01
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  332-5300
;      TELEFAX:
;      TELEX:
;  INFORMATION FOR SEQ ID NO:  53:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  30 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
;    HYPOTHETICAL:  NO
;    ANTI-SENSE:  NO
;    FRAGMENT TYPE:  internal
;    ORIGINAL SOURCE:
US-08-934-171-53


  Query Match             98.7%;  Score 153;  DB 13;  Length 30;
  Best Local Similarity   96.7%;  Pred. No. 3.7e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           |||||||||||||||||||||||:|||||||
Db       1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30


RESULT  13
US-09-206-601-1
; Sequence 1, Application US/09206601A
; GENERAL INFORMATION:
;  APPLICANT: DONG, ZHENG XIN
;  TITLE OF INVENTION: ANALOGUES OF GLP-1
;  FILE REFERENCE: 00537/186001
;  CURRENT APPLICATION NUMBER: US/09/206,601A
;  CURRENT FILING DATE: 1998-12-07
;  NUMBER OF SEQ ID NOS: 363
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 1
;   LENGTH: 30
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-09-206-601-1


  Query Match             98.7%;  Score 153;  DB 16;  Length 30;
  Best Local Similarity   96.7%;  Pred. No. 3.7e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

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Db       1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30


RESULT  14
US-09-206-601-18
; Sequence 18, Application US/09206601A
; GENERAL INFORMATION:
;  APPLICANT: DONG, ZHENG XIN
;  TITLE OF INVENTION: ANALOGUES OF GLP-1
;  FILE REFERENCE: 00537/186001
;  CURRENT APPLICATION NUMBER: US/09/206,601A
;  CURRENT FILING DATE: 1998-12-07
;  NUMBER OF SEQ ID NOS: 363
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 18
;   LENGTH: 30
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Description of Artificial Sequence: Mutagen
;   FEATURE:
;   OTHER INFORMATION: this sequence has an amidated c-terminus
US-09-206-601-18


  Query Match             98.7%;  Score 153;  DB 16;  Length 30;
  Best Local Similarity   96.7%;  Pred. No. 3.7e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
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Db       1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30


RESULT  15
US-09-206-601-21
; Sequence 21, Application US/09206601A
; GENERAL INFORMATION:
;  APPLICANT: DONG, ZHENG XIN
;  TITLE OF INVENTION: ANALOGUES OF GLP-1
;  FILE REFERENCE: 00537/186001
;  CURRENT APPLICATION NUMBER: US/09/206,601A
;  CURRENT FILING DATE: 1998-12-07
;  NUMBER OF SEQ ID NOS: 363
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 21
;   LENGTH: 30
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
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; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: Mutagen
; FEATURE:
; NAME/KEY: MOD_RES
; LOCATION: (1)
; OTHER INFORMATION: [125I]-3-iodotyrosine
; FEATURE:
; OTHER INFORMATION: this sequence has an amidated c-terminus
US-09-206-601-21

Query Match 98.7%; Score 153; DB 16; Length 30;
Best Local Similarity 96.7%; Pred. No. 3.7e-15;
Matches 29; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

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Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
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Db       1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30
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Search completed: August 7, 2002, 09:20:20
Job time: 239 sec

GenCore version 4.5

OM protein - protein search, using sw model

Run on: August 7, 2002, 09:17:16 ; Search time 23 Seconds
(without alignments)
201.831 Million cell updates/sec

Title: US-09-635-679C-3
Perfect score: 155
Sequence: 1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 475226 seqs, 154737215 residues

Total number of hits satisfying chosen parameters: 475226

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Pending_Patents_AA_New:*
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2: /cgn2_6/ptodata/2/paa/US06_NEW_COMB.pep:*
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4: /cgn2_6/ptodata/2/paa/US08_NEW_COMB.pep:*
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6: /cgn2_6/ptodata/2/paa/US10_NEW_COMB.pep:*
7: /cgn2_6/ptodata/2/paa/US60_NEW_COMB.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	155	100.0	30	5	US-09-635-679C-3	Sequence 3, Appli
2	153	98.7	30	1	PCT-US02-13088-4	Sequence 4, Appli
3	153	98.7	30	5	US-09-635-679C-4	Sequence 4, Appli
4	153	98.7	30	5	US-09-622-105-3	Sequence 3, Appli
5	153	98.7	30	6	US-10-072-540A-4	Sequence 4, Appli
6	153	98.7	30	6	US-10-125-255-1	Sequence 1, Appli
7	153	98.7	30	6	US-10-055-259-4	Sequence 4, Appli
8	153	98.7	31	1	PCT-US02-13088-3	Sequence 3, Appli
9	153	98.7	31	6	US-10-072-540A-1	Sequence 1, Appli
10	153	98.7	31	6	US-10-055-259-3	Sequence 3, Appli
11	153	98.7	31	6	US-10-169-657-1	Sequence 1, Appli
12	153	98.7	31	6	US-10-169-657-36	Sequence 36, Appl
13	153	98.7	36	1	PCT-US02-13088-2	Sequence 2, Appli
14	153	98.7	36	6	US-10-055-259-2	Sequence 2, Appli
15	153	98.7	37	1	PCT-US02-13088-1	Sequence 1, Appli
16	153	98.7	37	6	US-10-055-259-1	Sequence 1, Appli
17	153	98.7	52	1	PCT-US02-09650-29	Sequence 29, Appl
18	153	98.7	52	1	PCT-US02-09815-29	Sequence 29, Appl
19	153	98.7	52	6	US-10-112-582-29	Sequence 29, Appl
20	153	98.7	154	5	US-09-402-093B-20	Sequence 20, Appl
21	153	98.7	180	5	US-09-635-679C-2	Sequence 2, Appli
22	153	98.7	184	5	US-09-402-093B-22	Sequence 22, Appl
23	153	98.7	184	5	US-09-402-093B-23	Sequence 23, Appl
24	153	98.7	184	5	US-09-674-777B-5	Sequence 5, Appli
25	153	98.7	187	5	US-09-402-093B-21	Sequence 21, Appl
26	150	96.8	31	5	US-09-398-111-1	Sequence 1, Appli
27	150	96.8	31	5	US-09-398-111-2	Sequence 2, Appli
28	150	96.8	31	5	US-09-398-111-3	Sequence 3, Appli
29	150	96.8	32	5	US-09-398-111-85	Sequence 85, Appl
30	150	96.8	32	5	US-09-398-111-86	Sequence 86, Appl
31	150	96.8	33	5	US-09-398-111-10	Sequence 10, Appl
32	150	96.8	33	5	US-09-398-111-92	Sequence 92, Appl
33	150	96.8	33	5	US-09-398-111-93	Sequence 93, Appl
34	150	96.8	34	5	US-09-398-111-11	Sequence 11, Appl
35	150	96.8	38	5	US-09-398-111-82	Sequence 82, Appl
36	150	96.8	38	5	US-09-398-111-83	Sequence 83, Appl
37	150	96.8	39	5	US-09-398-111-89	Sequence 89, Appl
38	150	96.8	39	5	US-09-398-111-90	Sequence 90, Appl
39	149	96.1	31	6	US-10-072-540A-5	Sequence 5, Appli
40	149	96.1	31	6	US-10-169-657-5	Sequence 5, Appli
41	149	96.1	31	6	US-10-169-657-11	Sequence 11, Appl
42	149	96.1	31	6	US-10-169-657-12	Sequence 12, Appl
43	149	96.1	31	6	US-10-169-657-13	Sequence 13, Appl
44	149	96.1	31	6	US-10-169-657-14	Sequence 14, Appl
45	149	96.1	31	6	US-10-169-657-15	Sequence 15, Appl

ALIGNMENTS

RESULT 1
US-09-635-679C-3
; Sequence 3, Application US/09635679C
; GENERAL INFORMATION:
; APPLICANT: Habener, Joel
; TITLE OF INVENTION: Insulinotropic Hormone and Uses Thereof
; FILE REFERENCE: 0609.1090009
; CURRENT APPLICATION NUMBER: US/09/635,679C
; CURRENT FILING DATE: 2000-08-10
; PRIOR APPLICATION NUMBER: 09/090,949
; PRIOR FILING DATE: 1998-06-05
; PRIOR APPLICATION NUMBER: 08/749,762
; PRIOR FILING DATE: 1996-11-20
; PRIOR APPLICATION NUMBER: 08/156,800
; PRIOR FILING DATE: 1993-11-23
; PRIOR APPLICATION NUMBER: 09/532,111
; PRIOR FILING DATE: 1990-06-01
; PRIOR APPLICATION NUMBER: 07/148,517
; PRIOR FILING DATE: 1988-01-26
; PRIOR APPLICATION NUMBER: 06/859,928
; PRIOR FILING DATE: 1986-05-05
; NUMBER OF SEQ ID NOS: 4
; SOFTWARE: PatentIn version 3.1
; SEQ ID NO 3
; LENGTH: 30
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: insulinotropic peptide
US-09-635-679C-3

Query Match 100.0%; Score 155; DB 5; Length 30;
Best Local Similarity 100.0%; Pred. No. 5.7e-17;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
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Db 1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30

RESULT 2
PCT-US02-13088-4
; Sequence 4, Application PC/TUS0213088
; GENERAL INFORMATION:
; APPLICANT: Restoragen, Inc.
; TITLE OF INVENTION: METHODS AND COMPOSITIONS FOR TREATING CONDITIONS ASSOCIATED WI
; TITLE OF INVENTION: RESISTANCE
; FILE REFERENCE: RGN-3

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;  CURRENT APPLICATION NUMBER: PCT/US02/13088
;  CURRENT FILING DATE:  2002-04-24
;  NUMBER OF SEQ ID NOS: 13
;  SOFTWARE: PatentIn version 3.1
; SEQ ID NO 4
;   LENGTH: 30
;   TYPE: PRT
;   ORGANISM: mammalian
PCT-US02-13088-4


  Query Match             98.7%;  Score 153;  DB 1;  Length 30;
  Best Local Similarity   96.7%;  Pred. No. 1.2e-16;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
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Db      1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30


RESULT   3
US-09-635-679C-4
; Sequence 4, Application US/09635679C
; GENERAL INFORMATION:
;  APPLICANT: Habener, Joel
;  TITLE OF INVENTION: Insulinotropic Hormone and Uses Thereof
;  FILE REFERENCE: 0609.1090009
;  CURRENT APPLICATION NUMBER: US/09/635,679C
;  CURRENT FILING DATE:  2000-08-10
;  PRIOR APPLICATION NUMBER: 09/090,949
;  PRIOR FILING DATE: 1998-06-05
;  PRIOR APPLICATION NUMBER: 08/749,762
;  PRIOR FILING DATE: 1996-11-20
;  PRIOR APPLICATION NUMBER: 08/156,800
;  PRIOR FILING DATE: 1993-11-23
;  PRIOR APPLICATION NUMBER: 09/532,111
;  PRIOR FILING DATE: 1990-06-01
;  PRIOR APPLICATION NUMBER: 07/148,517
;  PRIOR FILING DATE: 1988-01-26
;  PRIOR APPLICATION NUMBER: 06/859,928
;  PRIOR FILING DATE: 1986-05-05
;  NUMBER OF SEQ ID NOS: 4
;  SOFTWARE: PatentIn version 3.1
; SEQ ID NO 4
;   LENGTH: 30
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: insulinotropic peptide
US-09-635-679C-4


  Query Match             98.7%;  Score 153;  DB 5;  Length 30;
  Best Local Similarity   96.7%;  Pred. No. 1.2e-16;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
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Db      1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30


RESULT   4
US-09-622-105-3
; Sequence 3, Application US/09622105
; GENERAL INFORMATION:
;  APPLICANT: YOUNG, ANDREW A.
;  APPLICANT:  VINE, WILL
;  APPLICANT:  BEELEY, NIGEL R.A.
;  APPLICANT:  PRICKETT, KATHRYN S.
;  TITLE OF INVENTION: INOTROPIC AND DIURETIC EFFECTS OF EXENDIN AND GLP-1
;  FILE REFERENCE: 256-152 US
;  CURRENT APPLICATION NUMBER: US/09/622,105
;  CURRENT FILING DATE:  2000-09-22
;  NUMBER OF SEQ ID NOS: 65
;  SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 3
;   LENGTH: 30
;   TYPE: PRT
;   ORGANISM: Homo sapiens
;   FEATURE:
;   OTHER INFORMATION: GLP-1
US-09-622-105-3


  Query Match             98.7%;  Score 153;  DB 5;  Length 30;
  Best Local Similarity   96.7%;  Pred. No. 1.2e-16;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
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Db      1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30


RESULT   5
US-10-072-540A-4
; Sequence 4, Application US/10072540A
; GENERAL INFORMATION:
;  APPLICANT: Hoffmann, James
;  TITLE OF INVENTION: GLP-1 FORMULATIONS
;  FILE REFERENCE: X-11368A
;  CURRENT APPLICATION NUMBER: US/10/072,540A
;  CURRENT FILING DATE:  2002-02-08
;  PRIOR APPLICATION NUMBER: US 60/067,600
;  PRIOR FILING DATE: 1997-12-05
;  NUMBER OF SEQ ID NOS: 5
;  SOFTWARE: PatentIn version 3.1
; SEQ ID NO 4
;   LENGTH: 30
;   TYPE: PRT
;   ORGANISM: Homo sapiens
;   FEATURE:
;   NAME/KEY: MOD_RES
;   LOCATION: (30)..(30)
;   OTHER INFORMATION: AMIDATION
US-10-072-540A-4


  Query Match             98.7%;  Score 153;  DB 6;  Length 30;
  Best Local Similarity   96.7%;  Pred. No. 1.2e-16;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
          |||||||||||||||||||||||:|||||||
Db      1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30


RESULT   6
US-10-125-255-1
; Sequence 1, Application US/10125255
; GENERAL INFORMATION:
;  APPLICANT: Galloway, John  A
;  APPLICANT:  Hoffmann, James A
;  TITLE OF INVENTION: Glucagon-Like Insulinotropic Peptides, Compositions and Method
;  FILE REFERENCE: X-9332E
;  CURRENT APPLICATION NUMBER: US/10/125,255
;  CURRENT FILING DATE:  2002-04-17
;  PRIOR APPLICATION NUMBER: 09/573,809
;  PRIOR FILING DATE: 2000-05-18
;  NUMBER OF SEQ ID NOS: 1
;  SOFTWARE: PatentIn version 3.1
; SEQ ID NO 1
;   LENGTH: 30
;   TYPE: PRT
;   ORGANISM: Homo sapiens
;   FEATURE:
;   NAME/KEY: MOD_RES
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;   LOCATION: (30)..(30)
;   OTHER INFORMATION: The arginine residue at position 30 is modified so as to replace
;   OTHER INFORMATION: the terminal carboxyl group with an amine.
US-10-125-255-1


  Query Match             98.7%;  Score 153;  DB 6;  Length 30;
  Best Local Similarity   96.7%;  Pred. No. 1.2e-16;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
          |||||||||||||||||||||||:|||||||
Db      1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30


RESULT   7
US-10-055-259-4
; Sequence 4, Application US/10055259
; GENERAL INFORMATION:
;  APPLICANT: Holst, Jens J.
;  APPLICANT:  Vilsboll, Tina
;  TITLE OF INVENTION: GLP-1 AS A DIAGNOSTIC TEST TO DETERMINE Beta-CELL FUNCTION AND TH
;  TITLE OF INVENTION:  PRESENCE OF THE CONDITION OF IGT AND TYPE-II DIABETES
;  FILE REFERENCE: P03987US1
;  CURRENT APPLICATION NUMBER: US/10/055,259
;  CURRENT FILING DATE:  2002-06-21
;  NUMBER OF SEQ ID NOS: 13
;  SOFTWARE: PatentIn version 3.1
; SEQ ID NO 4
;   LENGTH: 30
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-10-055-259-4


  Query Match             98.7%;  Score 153;  DB 6;  Length 30;
  Best Local Similarity   96.7%;  Pred. No. 1.2e-16;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
          |||||||||||||||||||||||:|||||||
Db      1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30


RESULT   8
PCT-US02-13088-3
; Sequence 3, Application PC/TUS0213088
; GENERAL INFORMATION:
;  APPLICANT: Restoragen, Inc.
;  TITLE OF INVENTION: METHODS AND COMPOSITIONS FOR TREATING CONDITIONS ASSOCIATED WITH
;  TITLE OF INVENTION:  RESISTANCE
;  FILE REFERENCE: RGN-3
;  CURRENT APPLICATION NUMBER: PCT/US02/13088
;  CURRENT FILING DATE:  2002-04-24
;  NUMBER OF SEQ ID NOS: 13
;  SOFTWARE: PatentIn version 3.1
; SEQ ID NO 3
;   LENGTH: 31
;   TYPE: PRT
;   ORGANISM: mammalian
PCT-US02-13088-3


  Query Match             98.7%;  Score 153;  DB 1;  Length 31;
  Best Local Similarity   96.7%;  Pred. No. 1.2e-16;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
          |||||||||||||||||||||||:|||||||
Db      1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30


RESULT   9
US-10-072-540A-1
; Sequence 1, Application US/10072540A
; GENERAL INFORMATION:
;  APPLICANT: Hoffmann, James
;  TITLE OF INVENTION: GLP-1 FORMULATIONS
;  FILE REFERENCE: X-11368A
;  CURRENT APPLICATION NUMBER: US/10/072,540A
;  CURRENT FILING DATE:  2002-02-08
;  PRIOR APPLICATION NUMBER: US 60/067,600
;  PRIOR FILING DATE: 1997-12-05
;  NUMBER OF SEQ ID NOS: 5
;  SOFTWARE: PatentIn version 3.1
; SEQ ID NO 1
;   LENGTH: 31
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-10-072-540A-1


  Query Match             98.7%;  Score 153;  DB 6;  Length 31;
  Best Local Similarity   96.7%;  Pred. No. 1.2e-16;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
          |||||||||||||||||||||||:|||||||
Db      1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30


RESULT  10
US-10-055-259-3
; Sequence 3, Application US/10055259
; GENERAL INFORMATION:
;  APPLICANT: Holst, Jens J.
;  APPLICANT:  Vilsboll, Tina
;  TITLE OF INVENTION: GLP-1 AS A DIAGNOSTIC TEST TO DETERMINE Beta-CELL FUNCTION AND
;  TITLE OF INVENTION:  PRESENCE OF THE CONDITION OF IGT AND TYPE-II DIABETES
;  FILE REFERENCE: P03987US1
;  CURRENT APPLICATION NUMBER: US/10/055,259
;  CURRENT FILING DATE:  2002-06-21
;  NUMBER OF SEQ ID NOS: 13
;  SOFTWARE: PatentIn version 3.1
; SEQ ID NO 3
;   LENGTH: 31
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-10-055-259-3


  Query Match             98.7%;  Score 153;  DB 6;  Length 31;
  Best Local Similarity   96.7%;  Pred. No. 1.2e-16;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
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Db      1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30


RESULT  11
US-10-169-657-1
; Sequence 1, Application US/10169657
; GENERAL INFORMATION:
;  APPLICANT: Eli Lilly and Company
;  TITLE OF INVENTION: Process for Solubilizing Glucagon-Like Peptide 1 Compounds
;  FILE REFERENCE: X-11708
;  CURRENT APPLICATION NUMBER: US/10/169,657
;  CURRENT FILING DATE:  2002-06-28
;  PRIOR APPLICATION NUMBER: US 60/178,438
;  PRIOR FILING DATE: 2000-01-27
;  PRIOR APPLICATION NUMBER: US 60/224,058
;  PRIOR FILING DATE: 2000-08-09
;  NUMBER OF SEQ ID NOS: 36
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 1
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;   LENGTH: 31
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-10-169-657-1


  Query Match             98.7%;  Score 153;  DB 6;  Length 31;
  Best Local Similarity   96.7%;  Pred. No. 1.2e-16;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
          ||||||||||||||||||||||:|||||||
Db      1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30


RESULT  12
US-10-169-657-36
; Sequence 36, Application US/10169657
; GENERAL INFORMATION:
;  APPLICANT: Eli Lilly and Company
;  TITLE OF INVENTION: Process for Solubilizing Glucagon-Like Peptide 1 Compounds
;  FILE REFERENCE: X-11708
;  CURRENT APPLICATION NUMBER: US/10/169,657
;  CURRENT FILING DATE:  2002-06-28
;  PRIOR APPLICATION NUMBER: US 60/178,438
;  PRIOR FILING DATE: 2000-01-27
;  PRIOR APPLICATION NUMBER: US 60/224,058
;  PRIOR FILING DATE: 2000-08-09
;  NUMBER OF SEQ ID NOS: 36
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 36
;   LENGTH: 31
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: synthetic construct
;   FEATURE:
;   NAME/KEY: VARIANT
;   LOCATION: (31)..(31)
;   OTHER INFORMATION: X at position 31 is NH2
US-10-169-657-36


  Query Match             98.7%;  Score 153;  DB 6;  Length 31;
  Best Local Similarity   96.7%;  Pred. No. 1.2e-16;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
          ||||||||||||||||||||||:|||||||
Db      1 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 30


RESULT  13
PCT-US02-13088-2
; Sequence 2, Application PC/TUS0213088
; GENERAL INFORMATION:
;  APPLICANT: Restoragen, Inc.
;  TITLE OF INVENTION: METHODS AND COMPOSITIONS FOR TREATING CONDITIONS ASSOCIATED WITH
;  TITLE OF INVENTION:  RESISTANCE
;  FILE REFERENCE: RGN-3
;  CURRENT APPLICATION NUMBER: PCT/US02/13088
;  CURRENT FILING DATE:  2002-04-24
;  NUMBER OF SEQ ID NOS: 13
;  SOFTWARE: PatentIn version 3.1
; SEQ ID NO 2
;   LENGTH: 36
;   TYPE: PRT
;   ORGANISM: mammalian
PCT-US02-13088-2


  Query Match             98.7%;  Score 153;  DB 1;  Length 36;
  Best Local Similarity   96.7%;  Pred. No. 1.4e-16;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
          ||||||||||||||||||||||:|||||||
Db      7 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 36


RESULT  14
US-10-055-259-2
; Sequence 2, Application US/10055259
; GENERAL INFORMATION:
;  APPLICANT: Holst, Jens J.
;  APPLICANT:  Vilsboll, Tina
;  TITLE OF INVENTION: GLP-1 AS A DIAGNOSTIC TEST TO DETERMINE Beta-CELL FUNCTION AND
;  TITLE OF INVENTION: PRESENCE OF THE CONDITION OF IGT AND TYPE-II DIABETES
;  FILE REFERENCE: P03987US1
;  CURRENT APPLICATION NUMBER: US/10/055,259
;  CURRENT FILING DATE:  2002-06-21
;  NUMBER OF SEQ ID NOS: 13
;  SOFTWARE: PatentIn version 3.1
; SEQ ID NO 2
;   LENGTH: 36
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-10-055-259-2


  Query Match             98.7%;  Score 153;  DB 6;  Length 36;
  Best Local Similarity   96.7%;  Pred. No. 1.4e-16;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
          ||||||||||||||||||||||:|||||||
Db      7 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 36


RESULT  15
PCT-US02-13088-1
; Sequence 1, Application PC/TUS0213088
; GENERAL INFORMATION:
;  APPLICANT: Restoragen, Inc.
;  TITLE OF INVENTION: METHODS AND COMPOSITIONS FOR TREATING CONDITIONS ASSOCIATED WI
;  TITLE OF INVENTION:  RESISTANCE
;  FILE REFERENCE: RGN-3
;  CURRENT APPLICATION NUMBER: PCT/US02/13088
;  CURRENT FILING DATE:  2002-04-24
;  NUMBER OF SEQ ID NOS: 13
;  SOFTWARE: PatentIn version 3.1
; SEQ ID NO 1
;   LENGTH: 37
;   TYPE: PRT
;   ORGANISM: mammalian
PCT-US02-13088-1


  Query Match             98.7%;  Score 153;  DB 1;  Length 37;
  Best Local Similarity   96.7%;  Pred. No. 1.5e-16;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
          ||||||||||||||||||||||:|||||||
Db      7 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 36


Search completed:  August  7, 2002, 09:20:49
Job time :  213 sec
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GenCore version 4.5

OM protein - protein search, using sw model

Run on: August 7, 2002, 09:18:11 ; Search time 10.34 Seconds
(without alignments)
112.339 Million cell updates/sec

Title: US-09-635-679C-3
Perfect score: 155
Sequence: 1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 105224 seqs, 38719550 residues

Total number of hits satisfying chosen parameters: 105224

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : SwissProt_40:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	153	98.7	158	1	GLUC_PIG	P01274 sus scrofa
2	153	98.7	180	1	GLUC_BOVIN	P01272 bos taurus
3	153	98.7	180	1	GLUC_CAVPO	P05110 cavia porce
4	153	98.7	180	1	GLUC_HUMAN	P01275 homo sapien
5	153	98.7	180	1	GLUC_MESAU	P01273 mesocricetu
6	153	98.7	180	1	GLUC_MOUSE	P55095 mus musculu
7	153	98.7	180	1	GLUC_OCTDE	P22890 octodon deg
8	153	98.7	180	1	GLUC_RAT	P06883 rattus norv
9	141	91.0	151	1	GLUC_CHICK	P01277 gallus gall
10	127	81.9	103	1	GLUC_RANCA	P15438 rana catesb
11	124	80.0	30	1	GLUM_ANGAN	P41521 anguilla an
12	118	76.1	122	1	GLU2_LOPAM	P04092 lophius ame
13	114	73.5	71	1	GLUC_ICTPU	P04093 ictalurus p
14	114	73.5	78	1	GLUC_LEPSP	P09566 lepisosteus
15	112	72.3	71	1	GLUC_PIAME	P81880 piaractus m
16	111	71.6	68	1	GLUC_ONCKI	P07449 oncorhynchu
17	108.5	70.0	33	1	GLU2_ORENI	P81027 oreochromis
18	108	69.7	121	1	GLUC_CARAU	P79695 carassius a
19	101	65.2	96	1	GLUC_MYOSC	P09686 myoxocephal
20	95	61.3	29	1	GLUC_TORMA	P09567 torpedo mar
21	94	60.6	124	1	GLU1_LOPAM	P01278 lophius ame
22	93	60.0	29	1	GLUC_SCYCA	P09687 scyliorhinu
23	91	58.7	29	1	GLUC_CALMI	P13189 callorhynch
24	88	56.8	29	1	GLUC_DIDMA	P18108 didelphis m
25	88	56.8	29	1	GLUC_LAMFL	Q9prq9 lampetra fl
26	88	56.8	29	1	GLUC_RABIT	P25449 oryctolagus
27	88	56.8	36	1	GLU1_ORENI	P81026 oreochromis
28	88	56.8	69	1	GLUC_CANFA	P29794 canis famil
29	86	55.5	29	1	GLUC_ANAPL	P01276 anas platyr
30	85	54.8	29	1	GLUC_CHIBR	P31297 chinchilla
31	85	54.8	87	1	EXE4_HELSU	P26349 heloderma s
32	84	54.2	29	1	GLUC_PLAFE	P23062 platichthys
33	83	53.5	39	1	EXE3_HELHO	P20394 heloderma h
34	81	52.3	75	1	GLUC_AMICA	P33528 amia calva
35	77	49.7	36	1	GLUC_HYDCO	P09682 hydrolagus
36	61	39.4	72	1	VIP_BOVIN	P81401 bos taurus
37	61	39.4	72	1	VIP_PIG	P01284 sus scrofa
38	61	39.4	72	1	VIP_RABIT	P32649 oryctolagus
39	61	39.4	170	1	VIP_HUMAN	P01282 homo sapien
40	61	39.4	170	1	VIP_MOUSE	P32648 mus musculu
41	61	39.4	170	1	VIP_RAT	P01283 rattus norv
42	59	38.1	42	1	GIP_BOVIN	P09680 bos taurus
43	59	38.1	42	1	GIP_PIG	P01281 sus scrofa
44	59	38.1	121	1	SECR_HUMAN	P09683 homo sapien
45	59	38.1	144	1	GIP_MOUSE	P48756 mus musculu

ALIGNMENTS

RESULT 1
GLUC_PIG
ID GLUC_PIG STANDARD; PRT; 158 AA.
AC P01274;
DT 21-JUL-1986 (Rel. 01, Created)
DT 01-NOV-1990 (Rel. 16, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE Glucagon precursor [Contains: Glicentin; Glicentin-related polypeptide
DE (GRPP); Glucagon; Glucagon-like peptide 1 (GLP1); Glucagon-like
DE peptide 2 (GLP2)] (Fragment).
GN GCG.
OS Sus scrofa (Pig).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
OX NCBI_TaxID=9823;
RN [1]
RP SEQUENCE OF 1-69.
RX MEDLINE=81248172; PubMed=6894800;
RA Thim L., Moody A.J.;
RT "The primary structure of porcine glicentin (proglucagon).";
RL Regul. Pept. 2:139-150(1981).
RN [2]
RP SEQUENCE OF 1-69.
RX MEDLINE=82221776; PubMed=7045833;
RA Thim L., Moody A.J.;
RT "The amino acid sequence of porcine glicentin.";
RL Peptides 2 Suppl. 2:37-39(1981).
RN [3]
RP SEQUENCE OF 33-61.
RA Bromer W.W., Sinn L.G., Behrens O.K.;
RT "The amino acid sequence of glucagon. V. Location of amide groups,
RT acid degradation studies and summary of sequential evidence.";
RL J. Am. Chem. Soc. 79:2807-2810(1957).
RN [4]
RP SEQUENCE OF 78-107.
RX MEDLINE=89327238; PubMed=2753890;
RA Orskov C., Bersani M., Johnsen A.H., Hoejrup P., Holst J.J.;
RT "Complete sequences of glucagon-like peptide-1 from human and pig
RT small intestine.";
RL J. Biol. Chem. 264:12826-12829(1989).
RN [5]
RP SEQUENCE OF 111-158.
RX MEDLINE=88243712; PubMed=3379036;
RA Buhl T., Thim L., Kofod H., Orskov C., Harling H., Holst J.J.;
RT "Naturally occurring products of proglucagon 111-160 in the porcine
RT and human small intestine.";
RL J. Biol. Chem. 263:8621-8624(1988).
RN [6]
RP X-RAY CRYSTALLOGRAPHY (3.0 ANGSTROMS).
RX MEDLINE=76051297; PubMed=171582;
RA Sasaki K., Dockerill S., Adamiak D.A., Tickle I.J., Blundell T.L.;
RT "X-ray analysis of glucagon and its relationship to receptor
RT binding.";
RL Nature 257:751-757(1975).
CC -!- FUNCTION: GLUCAGON PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND
CC RAISES THE BLOOD SUGAR LEVEL.

```
CC   -!- FUNCTION: GLP2 STIMULATES INTESTINAL GROWTH AND UPREGULATES VILLUS
CC       HEIGHT IN THE SMALL INTESTINE, CONCOMITANT WITH INCREASED CRYPT
CC       CELL PROLIFERATION AND DECREASED ENTEROCYTE APOPTOSIS.
CC   -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
CC       IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC   -!- MISCELLANEOUS: X'S IN THE SEQUENCE WERE INCLUDED BY HOMOLOGY WITH
CC       HUMAN SEQUENCE.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
DR   PIR; A01540; GCPG.
DR   PDB; 1GCN; 30-SEP-83.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 3.
DR   SMART; SM00070; GLUCA; 3.
DR   PROSITE; PS00260; GLUCAGON; 3.
KW   Glucagon family; Hormone; Cleavage on pair of basic residues;
KW   3D-structure.
FT   NON_TER       1      1
FT   PEPTIDE       1     69       GLICENTIN.
FT   PEPTIDE       1     30       GLICENTIN-RELATED POLYPEPTIDE.
FT   PEPTIDE      33     61       GLUCAGON.
FT   PEPTIDE      78    107       GLUCAGON-LIKE PEPTIDE 1.
FT   PEPTIDE     126    158       GLUCAGON-LIKE PEPTIDE 2.
FT   HELIX        39     42
FT   TURN         43     45
FT   HELIX        46     55
FT   TURN         56     57
SQ   SEQUENCE   158 AA;  18212 MW;  28C6FCF257F333B2 CRC64;


  Query Match             98.7%;  Score 153;  DB 1;  Length 158;
  Best Local Similarity   96.7%;  Pred. No. 8.1e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           |||||||||||||||||||||:|||||||
Db      78 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 107


RESULT   2
GLUC_BOVIN
ID   GLUC_BOVIN     STANDARD;      PRT;   180 AA.
AC   P01272;
DT   21-JUL-1986 (Rel. 01, Created)
DT   13-AUG-1987 (Rel. 05, Last sequence update)
DT   16-OCT-2001 (Rel. 40, Last annotation update)
DE   Glucagon precursor [Contains: Glicentin-related polypeptide (GRPP);
DE   Glucagon; Glucagon-like peptide 1 (GLP1); Glucagon-like peptide 2
DE   (GLP2)].
GN   GCG.
OS   Bos taurus (Bovine).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
OC   Bovidae; Bovinae; Bos.
OX   NCBI_TaxID=9913;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=83299996; PubMed=6577439;
RA   Lopez L.C., Frazier M.L., Su C.-J., Kumar A., Saunders G.F.;
RT   "Mammalian pancreatic preproglucagon contains three glucagon-related
RT   peptides.";
RL   Proc. Natl. Acad. Sci. U.S.A. 80:5485-5489(1983).
RN   [2]
RP   SEQUENCE OF 53-81.
RX   MEDLINE=71166445; PubMed=5102927;
RA   Bromer W.W., Boucher M.E., Koffenberger J.E. Jr.;
RT   "Amino acid sequence of bovine glucagon.";
RL   J. Biol. Chem. 246:2822-2827(1971).
CC   -!- FUNCTION: GLUCAGON PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND
CC       RAISES THE BLOOD SUGAR LEVEL.
CC   -!- FUNCTION: GLP2 STIMULATES INTESTINAL GROWTH AND UPREGULATES VILLUS
CC       HEIGHT IN THE SMALL INTESTINE, CONCOMITANT WITH INCREASED CRYPT
CC       CELL PROLIFERATION AND DECREASED ENTEROCYTE APOPTOSIS.
CC   -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
CC       IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use by non-profit institutions as long as its content is in no way
CC   modified and this statement is not removed. Usage by and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; K00107; AAA30538.1; -.
DR   PIR; A01538; GCBO.
DR   HSSP; P01274; 1GCN.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 3.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 3.
DR   PROSITE; PS00260; GLUCAGON; 4.
KW   Glucagon family; Hormone; Cleavage on pair of basic residues; Signal.
FT   SIGNAL        1     20
FT   PEPTIDE      21     50       GLICENTIN-RELATED POLYPEPTIDE.
FT   PEPTIDE      53     81       GLUCAGON.
FT   PEPTIDE      92    128       GLUCAGON-LIKE PEPTIDE 1.
FT   PEPTIDE     146    178       GLUCAGON-LIKE PEPTIDE 2.
SQ   SEQUENCE   180 AA;  20944 MW;  8D9B4FF05B9F15FF CRC64;


  Query Match             98.7%;  Score 153;  DB 1;  Length 180;
  Best Local Similarity   96.7%;  Pred. No. 9.3e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           |||||||||||||||||||||:|||||||
Db      98 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 127


RESULT   3
GLUC_CAVPO
ID   GLUC_CAVPO     STANDARD;      PRT;   180 AA.
AC   P01110;
DT   13-AUG-1987 (Rel. 05, Created)
DT   13-AUG-1987 (Rel. 05, Last sequence update)
DT   16-OCT-2001 (Rel. 40, Last annotation update)
DE   Glucagon precursor [Contains: Glicentin-related polypeptide (GRPP);
DE   Glucagon; Glucagon-37 (Oxyntomodulin); Glucagon-like peptide 1 (GLP1);
DE   Glucagon-like peptide 2 (GLP2)].
GN   GCG.
OS   Cavia porcellus (Guinea pig).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Hystricognathi; Caviidae; Cavia.
OX   NCBI_TaxID=10141;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=86248118; PubMed=3755107;
RA   Seino S., Welsh M., Bell G.I., Chan S.J., Steiner D.F.;
RT   "Mutations in the guinea pig preproglucagon gene are restricted to a
RT   specific portion of the prohormone sequence.";
RL   FEBS Lett. 203:25-30(1986).
RN   [2]
RP   SEQUENCE OF 53-81.
RX   MEDLINE=86165412; PubMed=3956884;
RA   Huang C.G., Eng J., Pan Y.-C.E., Hulmes J.D., Yalow R.S.;
RT   "Guinea pig glucagon differs from other mammalian glucagons.";
RL   Diabetes 35:508-512(1986).
RN   [3]
RP   PARTIAL SEQUENCE OF 53-89.
RX   MEDLINE=86017849; PubMed=4048553;
RA   Conlon J.M., Hansen H.F., Schwartz T.W.;
RT   "Primary structure of glucagon and a partial sequence of
RT   oxyntomodulin (glucagon-37) from the guinea pig.";
RL   Regul. Pept. 11:309-320(1985).
CC   -!- FUNCTION: GLUCAGON PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND
```

```
CC       RAISES THE BLOOD SUGAR LEVEL.
CC    -!- FUNCTION: GLP2 STIMULATES INTESTINAL GROWTH AND UPREGULATES VILLUS
CC       HEIGHT IN THE SMALL INTESTINE, CONCOMITANT WITH INCREASED CRYPT
CC       CELL PROLIFERATION AND DECREASED ENTEROCYTE APOPTOSIS.
CC    -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
CC       IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC    -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
CC    ---------------------------------------------------------------------
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CC    entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC    or send an email to license@isb-sib.ch).
CC    ---------------------------------------------------------------------
DR    EMBL; D00014; BAA00010.1; -.
DR    PIR; A24856; GCGP.
DR    HSSP; P01274; 1GCN.
DR    InterPro; IPR000532; Glucagon.
DR    Pfam; PF00123; hormone2; 3.
DR    PRINTS; PR00275; GLUCAGON.
DR    SMART; SM00070; GLUCA; 3.
DR    PROSITE; PS00260; GLUCAGON; 4.
KW    Glucagon family; Hormone; Cleavage on pair of basic residues; Signal.
FT    SIGNAL       1     20
FT    PEPTIDE     21     50       GLICENTIN-RELATED POLYPEPTIDE.
FT    PEPTIDE     53     81       GLUCAGON.
FT    PEPTIDE     53     89       GLUCAGON-37.
FT    PEPTIDE     92    128       GLUCAGON-LIKE PEPTIDE 1.
FT    PEPTIDE    146    178       GLUCAGON-LIKE PEPTIDE 2.
SQ    SEQUENCE   180 AA;  20972 MW;  702FB181161D2776 CRC64;


  Query Match             98.7%;  Score 153;  DB 1;  Length 180;
  Best Local Similarity   96.7%;  Pred. No. 9.3e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           |||||||||||||||||||||:|||||||
Db      98 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 127


RESULT   4
GLUC_HUMAN
ID    GLUC_HUMAN     STANDARD;      PRT;   180 AA.
AC    P01275;
DT    21-JUL-1986 (Rel. 01, Created)
DT    13-AUG-1987 (Rel. 05, Last sequence update)
DT    16-OCT-2001 (Rel. 40, Last annotation update)
DE    Glucagon precursor [Contains: Glicentin-related polypeptide (GRPP);
DE    Glucagon; Glucagon-like peptide 1 (GLP1); Glucagon-like peptide 2
DE    (GLP2)].
GN    GCG.
OS    Homo sapiens (Human).
OC    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC    Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX    NCBI_TaxID=9606;
RN    [1]
RP    SEQUENCE FROM N.A.
RX    MEDLINE=88330860; PubMed=2901414;
RA    Drucker D.J., Asa S.;
RT    "Glucagon gene expression in vertebrate brain.";
RL    J. Biol. Chem. 263:13475-13478(1988).
RN    [2]
RP    SEQUENCE FROM N.A.
RX    MEDLINE=86259053; PubMed=3725587;
RA    White J.W., Saunders G.F.;
RT    "Structure of the human glucagon gene.";
RL    Nucleic Acids Res. 14:4719-4730(1986).
RN    [3]
RP    SEQUENCE FROM N.A.
RC    TISSUE=Liver;
RX    MEDLINE=83271477; PubMed=6877358;
RA    Bell G.I., Sanchez-Pescador R., Laybourn P.J., Najarian R.C.;
RT    "Exon duplication and divergence in the human preproglucagon gene.";
RL    Nature 304:368-371(1983).
RN    [4]
RP    SEQUENCE OF 53-81.
RA    Thomsen J., Kristiansen K., Brunfeldt K., Sundby F.;
RT    "The amino acid sequence of human glucagon.";
RL    FEBS Lett. 21:315-319(1972).
RN    [5]
RP    SEQUENCE OF 98-127.
RX    MEDLINE=89327238; PubMed=2753890;
RA    Orskov C., Bersani M., Johnsen A.H., Hoejrup P., Holst J.J.;
RT    "Complete sequences of glucagon-like peptide-1 from human and pig
RT    small intestine.";
RL    J. Biol. Chem. 264:12826-12829(1989).
RN    [6]
RP    X-RAY CRYSTALLOGRAPHY (3.0 ANGSTROMS) OF 53-81.
RX    MEDLINE=98334683; PubMed=9667960;
RA    Sturm N.S., Lin Y., Burley S.K., Krstenansky J.L., Ahn J.M.,
RA    Azizeh B.Y., Trivedi D., Hruby V.J.;
RT    "Structure-function studies on positions 17, 18, and 21 replacement
RT    analogues of glucagon: the importance of charged residues and salt
RT    bridges in glucagon biological activity.";
RL    J. Med. Chem. 41:2693-2700(1998).
CC    -!- FUNCTION: GLUCAGON PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND
CC       RAISES THE BLOOD SUGAR LEVEL.
CC    -!- FUNCTION: GLP2 STIMULATES INTESTINAL GROWTH AND UPREGULATES VILLUS
CC       HEIGHT IN THE SMALL INTESTINE, CONCOMITANT WITH INCREASED CRYPT
CC       CELL PROLIFERATION AND DECREASED ENTEROCYTE APOPTOSIS.
CC    -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
CC       IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC    -!- PHARMACEUTICAL: Available under the names Glucagon (Eli Lilly) and
CC       GlucaGen or Glucagon Novo Nordisk (Novo Nordisk). Used to treat
CC       severe hypoglycemia in insulin-dependent diabetics.
CC    -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
CC    -!- DATABASE: NAME=Glucagon at Eli Lilly;
CC       NOTE=Clinical information on Eli Lilly glucagon products;
CC       WWW="http://www.lillyDiabetes.com/Products/PatientInfo.cfm".
CC    ---------------------------------------------------------------------
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CC    or send an email to license@isb-sib.ch).
CC    ---------------------------------------------------------------------
DR    EMBL; J04040; AAA52567.1; -.
DR    EMBL; X03991; CAA27627.1; -.
DR    EMBL; V01515; CAA24759.1; -.
DR    PIR; A24377; GCHU.
DR    PIR; S23309; S23309.
DR    PDB; 1BH0; 18-NOV-98.
DR    MIM; 138030; -.
DR    MIM; 231530; -.
DR    InterPro; IPR000532; Glucagon.
DR    Pfam; PF00123; hormone2; 3.
DR    PRINTS; PR00275; GLUCAGON.
DR    SMART; SM00070; GLUCA; 3.
DR    PROSITE; PS00260; GLUCAGON; 4.
KW    Glucagon family; Hormone; Cleavage on pair of basic residues; Signal;
KW    Pharmaceutical; 3D-structure.
FT    SIGNAL       1     20
FT    PEPTIDE     21     50       GLICENTIN-RELATED POLYPEPTIDE.
FT    PEPTIDE     53     81       GLUCAGON.
FT    PEPTIDE     98    127       GLUCAGON-LIKE PEPTIDE 1.
FT    PEPTIDE    146    178       GLUCAGON-LIKE PEPTIDE 2.
FT    CONFLICT    82     82       K -> N (IN REF. 3).
SQ    SEQUENCE   180 AA;  20909 MW;  7A99EEC629B2862C CRC64;


  Query Match             98.7%;  Score 153;  DB 1;  Length 180;
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  Best Local Similarity   96.7%;  Pred. No. 9.3e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           |||||||||||||||||||||:|||||||
Db      98 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 127


RESULT   5
GLUC_MESAU
ID   GLUC_MESAU     STANDARD;      PRT;   180 AA.
AC   P01273;
DT   21-JUL-1986 (Rel. 01, Created)
DT   01-FEB-1996 (Rel. 33, Last sequence update)
DT   16-OCT-2001 (Rel. 40, Last annotation update)
DE   Glucagon precursor [Contains: Glicentin-related polypeptide (GRPP);
DE   Glucagon; Glucagon-like peptide 1 (GLP1); Glucagon-like peptide 2
DE   (GLP2)].
GN   GCG.
OS   Mesocricetus auratus (Golden hamster).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Cricetinae;
OC   Mesocricetus.
OX   NCBI_TaxID=10036;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=83167563; PubMed=6835407;
RA   Bell G.I., Santerre R.F., Mullenbach G.T.;
RT   "Hamster preproglucagon contains the sequence of glucagon and two
RT   related peptides.";
RL   Nature 302:716-718(1983).
RN   [2]
RP   REVISIONS TO 12-15.
RA   Bell G.I.;
RL   Submitted (XXX-1985) to the EMBL/GenBank/DDBJ databases.
CC   -!- FUNCTION: GLUCAGON PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND
CC       RAISES THE BLOOD SUGAR LEVEL.
CC   -!- FUNCTION: GLP2 STIMULATES INTESTINAL GROWTH AND UPREGULATES VILLUS
CC       HEIGHT IN THE SMALL INTESTINE, CONCOMITANT WITH INCREASED CRYPT
CC       CELL PROLIFERATION AND DECREASED ENTEROCYTE APOPTOSIS.
CC   -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
CC       IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
CC   ---------------------------------------------------------------------
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; J00059; AAA37074.1; -.
DR   PIR; A01539; GCHY.
DR   HSSP; P01274; 1GCN.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 3.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 3.
DR   PROSITE; PS00260; GLUCAGON; 4.
KW   Glucagon family; Hormone; Cleavage on pair of basic residues; Signal.
FT   SIGNAL       1     20
FT   PEPTIDE     21     50       GLICENTIN-RELATED POLYPEPTIDE.
FT   PEPTIDE     53     81       GLUCAGON.
FT   PEPTIDE     92    128       GLUCAGON-LIKE PEPTIDE 1.
FT   PEPTIDE    146    178       GLUCAGON-LIKE PEPTIDE 2.
SQ   SEQUENCE   180 AA;  20954 MW;  02791B49D7AADD4B CRC64;


  Query Match             98.7%;  Score 153;  DB 1;  Length 180;
  Best Local Similarity   96.7%;  Pred. No. 9.3e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           |||||||||||||||||||||:|||||||
Db      98 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 127


RESULT   6
GLUC_MOUSE
ID   GLUC_MOUSE     STANDARD;      PRT;   180 AA.
AC   P55095;
DT   01-OCT-1996 (Rel. 34, Created)
DT   01-OCT-1996 (Rel. 34, Last sequence update)
DT   01-MAR-2002 (Rel. 41, Last annotation update)
DE   Glucagon precursor [Contains: Glicentin-related polypeptide (GRPP);
DE   Glucagon; Glucagon-like peptide 1 (GLP1); Glucagon-like peptide 2
DE   (GLP2)].
GN   GCG.
OS   Mus musculus (Mouse).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX   NCBI_TaxID=10090;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Pancreatic islets;
RX   MEDLINE=95247722; PubMed=7730317;
RA   Rothenberg M.E., Eilertson C.D., Klein K., Zhou Y., Linberg I.,
RA   McDonald J.K., Mackin R.B., Noe B.D.;
RT   "Processing of mouse proglucagon by recombinant prohormone convertase
RT   1 and immunopurified prohormone convertase 2 in vitro.";
RL   J. Biol. Chem. 270:10136-10146(1995).
RN   [2]
RP   SEQUENCE FROM N.A.
RA   Shamsadin R., Knepel W.;
RT   "Mouse glucagon full length cDNA.";
RL   Submitted (JUN-2000) to the EMBL/GenBank/DDBJ databases.
CC   -!- FUNCTION: GLUCAGON PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND
CC       RAISES THE BLOOD SUGAR LEVEL.
CC   -!- FUNCTION: GLP2 STIMULATES INTESTINAL GROWTH AND UPREGULATES VILLUS
CC       HEIGHT IN THE SMALL INTESTINE, CONCOMITANT WITH INCREASED CRYPT
CC       CELL PROLIFERATION AND DECREASED ENTEROCYTE APOPTOSIS.
CC   -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
CC       IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
CC   ---------------------------------------------------------------------
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CC   ---------------------------------------------------------------------
DR   EMBL; Z46845; CAA86902.1; -.
DR   EMBL; AF276754; AAK96898.1; -.
DR   HSSP; P01274; 1GCN.
DR   MGD; MGI:95674; Gcg.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 3.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 3.
DR   PROSITE; PS00260; GLUCAGON; 4.
KW   Glucagon family; Hormone; Cleavage on pair of basic residues; Signal.
FT   SIGNAL       1     20       BY SIMILARITY.
FT   PEPTIDE     21     50       GLICENTIN-RELATED POLYPEPTIDE.
FT   PEPTIDE     53     81       GLUCAGON.
FT   PEPTIDE     92    128       GLUCAGON-LIKE PEPTIDE 1.
FT   PEPTIDE    146    178       GLUCAGON-LIKE PEPTIDE 2.
SQ   SEQUENCE   180 AA;  20906 MW;  595AA6DD9A589950 CRC64;


  Query Match             98.7%;  Score 153;  DB 1;  Length 180;
  Best Local Similarity   96.7%;  Pred. No. 9.3e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;
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Qy      1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
          |||||||||||||||||||||||:||||||
Db     98 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 127


RESULT   7
GLUC_OCTDE
ID   GLUC_OCTDE     STANDARD;      PRT;   180 AA.
AC   P22890;
DT   01-AUG-1991 (Rel. 19, Created)
DT   01-AUG-1991 (Rel. 19, Last sequence update)
DT   16-OCT-2001 (Rel. 40, Last annotation update)
DE   Glucagon precursor [Contains: Glicentin-related polypeptide (GRPP);
DE   Glucagon; Glucagon-like peptide 1 (GLP1); Glucagon-like peptide 2
DE   (GLP2)].
GN   GCG.
OS   Octodon degus (Degu).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Hystricognathi; Octodontidae; Octodon.
OX   NCBI_TaxID=10160;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=91155952; PubMed=2293024;
RA   Nishi M., Steiner D.F.;
RT   "Cloning of complementary DNAs encoding islet amyloid polypeptide,
RT   insulin, and glucagon precursors from a New World rodent, the degu,
RT   Octodon degus.";
RL   Mol. Endocrinol. 4:1192-1198(1990).
CC   -!- FUNCTION: GLUCAGON PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND
CC       RAISES THE BLOOD SUGAR LEVEL.
CC   -!- FUNCTION: GLP2 STIMULATES INTESTINAL GROWTH AND UPREGULATES VILLUS
CC       HEIGHT IN THE SMALL INTESTINE, CONCOMITANT WITH INCREASED CRYPT
CC       CELL PROLIFERATION AND DECREASED ENTEROCYTE APOPTOSIS.
CC   -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
CC       IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
CC   ---------------------------------------------------------------------
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CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; M57688; AAA40588.1; -.
DR   PIR; C36118; GCRTDU.
DR   HSSP; P01274; 1GCN.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 3.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 3.
DR   PROSITE; PS00260; GLUCAGON; 4.
KW   Glucagon family; Hormone; Cleavage on pair of basic residues; Signal;
KW   Amidation.
FT   SIGNAL        1     20
FT   PEPTIDE      21     50       GLICENTIN-RELATED POLYPEPTIDE.
FT   PEPTIDE      53     81       GLUCAGON.
FT   PEPTIDE      92    127       GLUCAGON-LIKE PEPTIDE 1.
FT   PEPTIDE     146    178       GLUCAGON-LIKE PEPTIDE 2.
FT   MOD_RES     127    127       AMIDATION (G-128 PROVIDE AMIDE GROUP).
SQ   SEQUENCE   180 AA;  21165 MW;  6E8836160A9A3051 CRC64;


  Query Match             98.7%;  Score 153;  DB 1;  Length 180;
  Best Local Similarity   96.7%;  Pred. No. 9.3e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
          |||||||||||||||||||||||:||||||
Db     98 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 127


RESULT   8
GLUC_RAT
ID   GLUC_RAT       STANDARD;      PRT;   180 AA.
AC   P06883;
DT   01-JAN-1988 (Rel. 06, Created)
DT   01-JAN-1988 (Rel. 06, Last sequence update)
DT   16-OCT-2001 (Rel. 40, Last annotation update)
DE   Glucagon precursor [Contains: Glicentin-related polypeptide (GRPP);
DE   Glucagon; Glucagon-like peptide 1 (GLP1); Glucagon-like peptide 2
DE   (GLP2)].
GN   GCG.
OS   Rattus norvegicus (Rat).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
OX   NCBI_TaxID=10116;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=85054853; PubMed=6094539;
RA   Heinrich G., Gros P., Habener J.F.;
RT   "Glucagon gene sequence. Four of six exons encode separate functional
RT   domains of rat pre-proglucagon.";
RL   J. Biol. Chem. 259:14082-14087(1984).
RN   [2]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=85051023; PubMed=6548696;
RA   Heinrich G., Gros P., Lund P.K., Bentley R.C., Habener J.F.;
RT   "Pre-proglucagon messenger ribonucleic acid: nucleotide and encoded
RT   amino acid sequences of the rat pancreatic complementary
RT   deoxyribonucleic acid.";
RL   Endocrinology 115:2176-2181(1984).
RN   [3]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=86304324; PubMed=3528148;
RA   Mojsov S., Heinrich G., Wilson I.B., Ravazzola M., Orci L.,
RA   Habener J.F.;
RT   "Preproglucagon gene expression in pancreas and intestine diversifies
RT   at the level of post-translational processing.";
RL   J. Biol. Chem. 261:11880-11889(1986).
CC   -!- FUNCTION: GLUCAGON PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND
CC       RAISES THE BLOOD SUGAR LEVEL.
CC   -!- FUNCTION: GLP2 STIMULATES INTESTINAL GROWTH AND UPREGULATES VILLUS
CC       HEIGHT IN THE SMALL INTESTINE, CONCOMITANT WITH INCREASED CRYPT
CC       CELL PROLIFERATION AND DECREASED ENTEROCYTE APOPTOSIS.
CC   -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
CC       IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
CC   ---------------------------------------------------------------------
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; K02813; AAA41235.1; -.
DR   EMBL; K02809; AAA41235.1; JOINED.
DR   EMBL; K02810; AAA41235.1; JOINED.
DR   EMBL; K02811; AAA41235.1; JOINED.
DR   EMBL; K02812; AAA41235.1; JOINED.
DR   PIR; A22655; GCRT.
DR   PIR; A44198; A44198.
DR   HSSP; P01274; 1GCN.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 3.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 3.
DR   PROSITE; PS00260; GLUCAGON; 4.
KW   Glucagon family; Hormone; Cleavage on pair of basic residues; Signal.
FT   SIGNAL        1     20
FT   PEPTIDE      21     50       GLICENTIN-RELATED POLYPEPTIDE.
FT   PEPTIDE      53     81       GLUCAGON.
FT   PEPTIDE      92    128       GLUCAGON-LIKE PEPTIDE 1.
```

```
FT   PEPTIDE     146    178       GLUCAGON-LIKE PEPTIDE 2.
SQ   SEQUENCE   180 AA;  20846 MW;  76931409D03C7978 CRC64;


  Query Match             98.7%;  Score 153;  DB 1;  Length 180;
  Best Local Similarity   96.7%;  Pred. No. 9.3e-15;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           |||||||||||||||||||||:|||||||
Db      98 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 127


RESULT   9
GLUC_CHICK
ID   GLUC_CHICK     STANDARD;      PRT;   151 AA.
AC   P01277;
DT   21-JUL-1986 (Rel. 01, Created)
DT   01-AUG-1990 (Rel. 15, Last sequence update)
DT   15-JUL-1999 (Rel. 38, Last annotation update)
DE   Glucagon precursor.
OS   Gallus gallus (Chicken), and
OS   Meleagris gallopavo (Common turkey).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
OC   Gallus.
OX   NCBI_TaxID=9031, 9103;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   SPECIES=Chicken; TISSUE=Pancreas;
RX   MEDLINE=90249492; PubMed=2338135;
RA   Hasegawa S., Terazono K., Nata K., Takada T., Yamamoto H.,
RA   Okamoto H.;
RT   "Nucleotide sequence determination of chicken glucagon precursor
RT   cDNA. Chicken preproglucagon does not contain glucagon-like peptide
RT   II.";
RL   FEBS Lett. 264:117-120(1990).
RN   [2]
RP   SEQUENCE OF 55-83.
RC   SPECIES=Chicken;
RX   MEDLINE=76069271; PubMed=1194290;
RA   Pollock H.G., Kimmel J.R.;
RT   "Chicken glucagon. Isolation and amino acid sequence studies.";
RL   J. Biol. Chem. 250:9377-9380(1975).
RN   [3]
RP   COMPOSITION, AND SEQUENCE OF 55-83.
RC   SPECIES=M.gallopavo;
RX   MEDLINE=73074118; PubMed=4645932;
RA   Markussen J., Frandsen E.K., Heding L.G., Sundby F.;
RT   "Turkey glucagon: crystallization, amino acid composition and
RT   immunology.";
RL   Horm. Metab. Res. 4:360-363(1972).
CC   -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
CC       THE BLOOD SUGAR LEVEL.
CC   -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
CC       IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC   -!- MISCELLANEOUS: THE COMPOSITION OF TURKEY GLUCAGON APPEARS TO BE
CC       IDENTICAL WITH CHICKEN.
CC   -!- MISCELLANEOUS: CHICKEN PREPROGLUCAGON DOES NOT CONTAIN
CC       GLUCAGON-LIKE PEPTIDE II.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
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CC   use by non-profit institutions as long as its content is in no way
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; Y07539; CAA68827.1; -.
DR   PIR; S09992; GCCH.
DR   PIR; A91740; A91740.
DR   HSSP; P01274; 1GCN.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 2.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 2.
DR   PROSITE; PS00260; GLUCAGON; 3.
KW   Glucagon family; Hormone; Cleavage on pair of basic residues; Signal;
KW   Amidation.
FT   SIGNAL       1     22
FT   CHAIN       23    151       PROGLUCAGON.
FT   PEPTIDE     55     83       GLUCAGON.
FT   PROPEP      86    118
FT   PEPTIDE    118    147       GLUCAGON-LIKE PEPTIDE.
FT   MOD_RES    147    147       AMIDATION (G-148 PROVIDE AMIDE GROUP).
SQ   SEQUENCE   151 AA;  17520 MW;  B6C0D87536C0AEB5 CRC64;


  Query Match             91.0%;  Score 141;  DB 1;  Length 151;
  Best Local Similarity   83.3%;  Pred. No. 4e-13;
  Matches   25;  Conservative    4;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           |||||:|||::||||||||||||:|||| ||
Db     119 HAEGTYTSDITSYLEGQAAKEFIAWLVNGR 147


RESULT  10
GLUC_RANCA
ID   GLUC_RANCA     STANDARD;      PRT;   103 AA.
AC   P15433; P15439; P15440;
DT   01-APR-1990 (Rel. 14, Created)
DT   01-JUL-1993 (Rel. 26, Last sequence update)
DT   01-JUL-1993 (Rel. 26, Last annotation update)
DE   Glucagon precursor (Fragments).
OS   Rana catesbeiana (Bull frog).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Amphibia; Batrachia; Anura; Neobatrachia; Ranoidea; Ranidae; Rana.
OX   NCBI_TaxID=8400;
RN   [1]
RP   SEQUENCE.
RC   TISSUE=Pancreas;
RX   MEDLINE=88257102; PubMed=3260236;
RA   Pollock H.G., Hamilton J.W., Rouse J.B., Ebner K.E., Rawitch A.B.;
RT   "Isolation of peptide hormones from the pancreas of the bullfrog
RT   (Rana catesbeiana). Amino acid sequences of pancreatic polypeptide,
RT   oxyntomodulin, and two glucagon-like peptides.";
RL   J. Biol. Chem. 263:9746-9751(1988).
CC   -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
CC       THE BLOOD SUGAR LEVEL.
CC   -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
CC       IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC   -!- MISCELLANEOUS: X'S IN THE SEQUENCE WERE INCLUDED BY HOMOLOGY WITH
CC       OTHER SPECIES SEQUENCES.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
DR   PIR; B28091; GCFGB.
DR   HSSP; P01274; 1GCN.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 3.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 3.
DR   PROSITE; PS00260; GLUCAGON; 3.
KW   Glucagon family; Hormone.
FT   PEPTIDE      1     29       GLUCAGON.
FT   PEPTIDE      1     36       GLUCAGON-36 (OXYNTOMODULIN).
FT   PEPTIDE     39     70       GLUCAGON-LIKE PEPTIDE 1.
FT   NON_CONS    70     71
FT   PEPTIDE     71    103       GLUCAGON-LIKE PEPTIDE 2.
SQ   SEQUENCE   103 AA;  11719 MW;  316287B7BAE1C8F7 CRC64;


  Query Match             81.9%;  Score 127;  DB 1;  Length 103;
  Best Local Similarity   76.7%;  Pred. No. 2.7e-11;
  Matches   23;  Conservative    5;  Mismatches    2;  Indels    0;  Gaps    0;
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Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           ||:|||||:|||||  :|||||: ||:|||
Db      39 HADGTFTSDMSSYLEEKAAKEFVDWLIKGR 68
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RESULT 11
GLUM_ANGAN
ID GLUM_ANGAN STANDARD; PRT; 30 AA.
AC P41521;
DT 01-NOV-1995 (Rel. 32, Created)
DT 01-NOV-1995 (Rel. 32, Last sequence update)
DT 01-NOV-1995 (Rel. 32, Last annotation update)
DE Glucagon-like peptide (GLP).
OS Anguilla anguilla (European freshwater eel), and
OS Anguilla rostrata (American eel).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Actinopterygii; Neopterygii; Teleostei; Anguilliformes; Anguilloidei;
OC Anguillidae; Anguilla.
OX NCBI_TaxID=7936, 7938;
RN [1]
RP SEQUENCE.
RC TISSUE=Pancreas;
RX MEDLINE=91340068; PubMed=1874385;
RA Conlon J.M., Andrews P.C., Thim L., Moon T.W.;
RT "The primary structure of glucagon-like peptide but not insulin has
RT been conserved between the American eel, Anguilla rostrata and the
RT European eel, Anguilla anguilla.";
RL Gen. Comp. Endocrinol. 82:23-32(1991).
CC -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
DR PIR; B61125; B61125.
DR PIR; C61125; C61125.
DR HSSP; P01275; 1BH0.
DR InterPro; IPR000532; Glucagon.
DR Pfam; PF00123; hormone2; 1.
DR PRINTS; PR00275; GLUCAGON.
DR SMART; SM00070; GLUCA; 1.
DR PROSITE; PS00260; GLUCAGON; 1.
KW Glucagon family; Amidation.
FT MOD_RES 30 30 AMIDATION.
SQ SEQUENCE 30 AA; 3376 MW; 592DA5EABD6E49D0 CRC64;

Query Match 80.0%; Score 124; DB 1; Length 30;
Best Local Similarity 76.7%; Pred. No. 2e-11;
Matches 23; Conservative 4; Mismatches 3; Indels 0; Gaps 0;

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Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           |||||:||||||||: ||||||::||  ||
Db       1 HAEGTYTSDVSSYLQDQAAKEFVSWLKTGR 30
```

RESULT 12
GLU2_LOPAM
ID GLU2_LOPAM STANDARD; PRT; 122 AA.
AC P04092;
DT 01-NOV-1986 (Rel. 03, Created)
DT 01-NOV-1986 (Rel. 03, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE Glucagon II precursor [Contains: Glicentin-related polypeptide (GRPP);
DE Glucagon II; Glucagon-like peptide II].
OS Lophius americanus (American goosefish) (Anglerfish).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei;
OC Acanthomorpha; Paracanthopterygii; Lophiiformes; Lophiidae; Lophius.
OX NCBI_TaxID=8073;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=83135785; PubMed=6338015;
RA Lund P.K., Goodman R.H., Montminy M.R., Dee P.C., Habener J.F.;
RT "Anglerfish islet pre-proglucagon II. Nucleotide and corresponding
RT amino acid sequence of the cDNA.";
RL J. Biol. Chem. 258:3280-3284(1983).
RN [2]
RP PROCESSING.
RX MEDLINE=86286913; PubMed=3526301;
RA Noe B.D., Andrews P.C.;
RT "Specific glucagon-related peptides isolated from anglerfish islets
RT are metabolic cleavage products of (pre)proglucagon-II.";
RL Peptides 7:331-339(1986).
CC -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
CC THE BLOOD SUGAR LEVEL.
CC -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
CC IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
CC ---
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CC or send an email to license@isb-sib.ch).
CC ---
DR EMBL; V00632; CAA23905.1; -.
DR PIR; A05150; GCAF2.
DR HSSP; P01274; 1GCN.
DR InterPro; IPR000532; Glucagon.
DR Pfam; PF00123; hormone2; 2.
DR PRINTS; PR00275; GLUCAGON.
DR SMART; SM00070; GLUCA; 2.
DR PROSITE; PS00260; GLUCAGON; 2.
KW Glucagon family; Hormone; Cleavage on pair of basic residues; Signal.
FT SIGNAL 1 21
FT PEPTIDE 22 49 GLICENTIN-RELATED POLYPEPTIDE.
FT PEPTIDE 52 80 GLUCAGON II.
FT PROPEP 83 86
FT PEPTIDE 89 119 GLUCAGON-LIKE PEPTIDE II.
SQ SEQUENCE 122 AA; 14171 MW; 5140AC47EF915519 CRC64;

Query Match 76.1%; Score 118; DB 1; Length 122;
Best Local Similarity 70.0%; Pred. No. 6e-10;
Matches 21; Conservative 6; Mismatches 3; Indels 0; Gaps 0;

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Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           ||:||:||||||||: ||||:|::||  ||
Db      89 HADGTYTSDVSSYLQDQAAKDFVSWLKAGR 118
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RESULT 13
GLUC_ICTPU
ID GLUC_ICTPU STANDARD; PRT; 71 AA.
AC P04093;
DT 01-NOV-1986 (Rel. 03, Created)
DT 01-MAR-1989 (Rel. 10, Last sequence update)
DT 01-NOV-1990 (Rel. 16, Last annotation update)
DE Glucagon precursor (Fragment).
OS Ictalurus punctatus (Channel catfish).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Actinopterygii; Neopterygii; Teleostei; Euteleostei; Ostariophysi;
OC Siluriformes; Ictaluridae; Ictalurus.
OX NCBI_TaxID=7998;
RN [1]
RP SEQUENCE.
RC TISSUE=Pancreas;
RX MEDLINE=87156787; PubMed=3030323;
RA Hoosein N.M., Mahrenholz A.M., Andrews P.C., Gurd R.S.;
RT "Biological activities of catfish glucagon and glucagon-like
RT peptide.";
RL Biochem. Biophys. Res. Commun. 143:87-92(1987).
RN [2]
RP SEQUENCE.
RC TISSUE=Pancreas;
RX MEDLINE=85157536; PubMed=3838546;
RA Andrews P.C., Ronner P.;

```
RT   "Isolation and structures of glucagon and glucagon-like peptide from
RT   catfish pancreas.";
RL   J. Biol. Chem. 260:3910-3914(1985).
CC   -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
CC       THE BLOOD SUGAR LEVEL.
CC   -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
CC       IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC   -!- MISCELLANEOUS: X'S IN THE SEQUENCE WERE INCLUDED BY HOMOLOGY WITH
CC       AMERICAN GOOSEFISH SEQUENCES.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
DR   PIR; A05166; GCIDC.
DR   HSSP; P01274; 1GCN.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 2.
DR   SMART; SM00070; GLUCA; 2.
DR   PROSITE; PS00260; GLUCAGON; 2.
KW   Glucagon family; Hormone.
FT   NON_TER       1      1
FT   PEPTIDE       1     29       GLUCAGON.
FT   PEPTIDE      38     71       GLUCAGON-LIKE PEPTIDE.
FT   CONFLICT     53     53       E -> D (IN REF. 2).
FT   NON_TER      71     71
SQ   SEQUENCE   71 AA;  8173 MW;  24688E79AD981A8F CRC64;


  Query Match             73.5%;  Score 114;  DB 1;  Length 71;
  Best Local Similarity   66.7%;  Pred. No. 1.3e-09;
  Matches   20;  Conservative    6;  Mismatches    4;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           ||:||:|||||||||: ||||:|: ||  |:
Db      38 HADGTYTSDVSSYLQEQAAKDFITWLKSGQ 67


RESULT  14
GLUC_LEPSP
ID   GLUC_LEPSP     STANDARD;      PRT;    78 AA.
AC   P09566;
DT   01-MAR-1989 (Rel. 10, Created)
DT   01-NOV-1990 (Rel. 16, Last sequence update)
DT   16-OCT-2001 (Rel. 40, Last annotation update)
DE   Glucagon precursor [Contains: Glucagon; Glucagon-36 (Oxyntomodulin);
DE   Glucagon-like peptide] (Fragment).
OS   Lepisosteus spatula (Alligator gar) (Atractosteus spatula).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Actinopterygii; Neopterygii; Semionotiformes; Lepisosteidae;
OC   Lepisosteus.
OX   NCBI_TaxID=7917;
RN   [1]
RP   SEQUENCE OF 1-36 AND 45-78.
RC   TISSUE=Pancreas;
RX   MEDLINE=88196798; PubMed=3282974;
RA   Pollock H.G., Kimmel J.R., Ebner K.E., Hamilton J.W., Rouse J.B.,
RA   Lance V., Rawitch A.B.;
RT   "Isolation of alligator gar (Lepisosteus spatula) glucagon,
RT   oxyntomodulin, and glucagon-like peptide: amino acid sequences of
RT   oxyntomodulin and glucagon-like peptide.";
RL   Gen. Comp. Endocrinol. 69:133-140(1988).
RN   [2]
RP   PRELIMINARY SEQUENCE OF 1-29.
RC   TISSUE=Pancreas;
RX   MEDLINE=88030594; PubMed=3311873;
RA   Pollock H.G., Kimmel J.R., Hamilton J.W., Rouse J.B., Ebner K.E.,
RA   Lance V., Rawitch A.B.;
RT   "Isolation and structures of alligator gar (Lepisosteus spatula)
RT   insulin and pancreatic polypeptide.";
RL   Gen. Comp. Endocrinol. 67:375-382(1987).
CC   -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
CC       THE BLOOD SUGAR LEVEL.
CC   -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
CC       IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC   -!- MISCELLANEOUS: X'S IN THE SEQUENCE WERE INCLUDED BY HOMOLOGY WITH
CC       AMERICAN GOOSEFISH SEQUENCES.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
DR   PIR; S06339; GCGXA.
DR   HSSP; P01274; 1GCN.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 2.
DR   SMART; SM00070; GLUCA; 2.
DR   PROSITE; PS00260; GLUCAGON; 2.
KW   Glucagon family; Hormone.
FT   PEPTIDE       1     29       GLUCAGON.
FT   PEPTIDE       1     36       GLUCAGON-36.
FT   PEPTIDE      45     78       GLUCAGON-LIKE PEPTIDE.
SQ   SEQUENCE   78 AA;  8990 MW;  30106496271594E0 CRC64;


  Query Match             73.5%;  Score 114;  DB 1;  Length 78;
  Best Local Similarity   66.7%;  Pred. No. 1.4e-09;
  Matches   20;  Conservative    7;  Mismatches    3;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           ||:||:|||||||||: ||||:|: ||  |:
Db      45 HADGTYTSDVSSYLQDQAAKKFVTWLKQGQ 74


RESULT  15
GLUC_PIAME
ID   GLUC_PIAME     STANDARD;      PRT;    71 AA.
AC   P81380;
DT   30-MAY-2000 (Rel. 39, Created)
DT   30-MAY-2000 (Rel. 39, Last sequence update)
DT   30-MAY-2000 (Rel. 39, Last annotation update)
DE   Glucagon precursor (Fragment).
OS   Piaractus mesopotamicus (Pacu).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Actinopterygii; Neopterygii; Teleostei; Euteleostei; Ostariophysi;
OC   Characiformes; Characidae; Serrasalminae; Piaractus.
OX   NCBI_TaxID=42528;
RN   [1]
RP   SEQUENCE.
RC   TISSUE=Pancreas;
RX   MEDLINE=99259587; PubMed=10327603;
RA   de Lima J.A., Oliveira B., Conlon J.M.;
RT   "Purification and characterization of insulin and peptides derived
RT   from proglucagon and prosomatostatin from the fruit-eating fish, the
RT   pacu Piaractus mesopotamicus.";
RL   Comp. Biochem. Physiol. 122B:127-135(1999).
CC   -!- FUNCTION: PROMOTES HYDROLYSIS OF GLYCOGEN AND LIPIDS, AND RAISES
CC       THE BLOOD SUGAR LEVEL.
CC   -!- INDUCTION: PRODUCED IN THE A CELLS OF THE ISLETS OF LANGERHANS
CC       IN RESPONSE TO A DROP IN BLOOD SUGAR CONCENTRATION.
CC   -!- MISCELLANEOUS: X'S IN THE SEQUENCE WERE INCLUDED BY HOMOLOGY WITH
CC       OTHER FISH SEQUENCES.
CC   -!- SIMILARITY: BELONGS TO THE GLUCAGON FAMILY.
DR   HSSP; P01274; 1GCN.
DR   InterPro; IPR000532; Glucagon.
DR   Pfam; PF00123; hormone2; 2.
DR   PRINTS; PR00275; GLUCAGON.
DR   SMART; SM00070; GLUCA; 2.
DR   PROSITE; PS00260; GLUCAGON; 2.
KW   Glucagon family; Hormone.
FT   NON_TER       1      1
FT   PEPTIDE       1     29       GLUCAGON.
FT   PEPTIDE      38     71       GLUCAGON-LIKE PEPTIDE.
FT   NON_TER      71     71
SQ   SEQUENCE   71 AA;  8146 MW;  F66A3CA2DD9806C5 CRC64;


  Query Match             72.3%;  Score 112;  DB 1;  Length 71;
  Best Local Similarity   63.3%;  Pred. No. 2.5e-09;
  Matches   19;  Conservative    7;  Mismatches    4;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           |:|||:|||||:||: ||||:|: ||  |:
Db      33 HADGTYTSDVSAYLQDQAAKDFITWLKSGQ 67
```

Search completed: August 7, 2002, 09:21:37
Job time: 206 sec

GenCore version 4.5

OM protein - protein search, using sw model

Run on: August 7, 2002, 09:15:16 ; Search time 14.78 Seconds
(without alignments)
195.039 Million cell updates/sec

Title: US-09-635-679C-3
Perfect score: 155
Sequence: 1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 283138 seqs, 96089334 residues

Total number of hits satisfying chosen parameters: 283138

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : PIR_71:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	153	98.7	158	1	GCPG	glucagon precursor
2	153	98.7	180	1	GCHU	glucagon precursor
3	153	98.7	180	1	GCGP	glucagon precursor
4	153	98.7	180	1	GCRTDU	glucagon precursor
5	153	98.7	180	1	GCRT	glucagon precursor
6	153	98.7	180	1	GCHY	glucagon precursor
7	153	98.7	180	1	GCBO	glucagon precursor
8	153	98.7	180	2	A57294	glucagon precursor
9	141	91.0	151	1	GCCH	glucagon precursor
10	141	91.0	206	2	I51301	proglucagon - chic
11	127	81.9	101	1	GCFGB	glucagon precursor
12	124	80.0	30	2	B61125	glucagon-like pept
13	124	80.0	30	2	C61125	glucagon-like pept
14	118	76.1	122	1	GCAF2	glucagon 2 precurs
15	116	74.8	66	2	I51093	glucagon - chinook
16	116	74.8	178	2	I51058	glucagon I precurs
17	115	74.2	63	1	GCIDC	glucagon precursor
18	114	73.5	72	1	GCGXA	glucagon precursor
19	111	71.6	60	1	GCONC	glucagon precursor
20	111	71.6	178	2	I51057	glucagon II precur
21	109	70.3	30	2	S44473	glucagon-like pept
22	101	65.2	87	1	GCFIS	glucagon precursor
23	95	61.3	29	2	S07211	glucagon - marbled
24	94	60.6	31	2	S44472	glucagon G2 - Nort
25	94	60.6	124	1	GCAF	glucagon 1 precurs
26	93	60.0	29	1	GCDF	glucagon - smaller
27	92	59.4	31	2	S44471	glucagon G1 - Nort
28	91	58.7	29	1	GCEN	glucagon - elephan
29	88	56.8	29	1	GCOPV	glucagon - North A
30	88	56.8	29	2	A91740	glucagon - turkey
31	88	56.8	29	2	A91741	glucagon - rabbit
32	88	56.8	29	2	A91742	glucagon - Arabian
33	88	56.8	29	2	C39258	glucagon - common
34	88	56.8	69	1	GCDG69	glucagon-69 - dog
35	86	55.5	29	1	GCDK	glucagon - duck
36	86	55.5	29	1	A61583	glucagon - ostrich
37	86	55.5	29	1	GCTTS	glucagon - slider
38	86	55.5	29	2	C60840	glucagon I - Europ
39	85	54.8	29	1	GCCB	glucagon - Chinchi
40	85	54.8	39	1	HWGH4G	exendin-4 - Gila m
41	84	54.2	29	1	GCFLE	glucagon - Europea
42	84	54.2	29	2	A61135	glucagon - bigeye
43	83	53.5	39	1	HWGH3Z	exendin-3 - Mexica
44	81	52.3	29	2	S39018	glucagon - bowfin
45	77	49.7	36	1	GCFI	glucagon-36 - spot

ALIGNMENTS

RESULT 1
GCPG
glucagon precursor - pig (fragment)
N;Alternate names: glicentin; oxyntomodulin
N;Contains: glicentin-related peptide; glucagon; glucagon-37 (oxyntomodulin); glucago
C;Species: Sus scrofa domestica (domestic pig)
C;Date: 17-Dec-1982 #sequence_revision 31-Mar-1993 #text_change 20-Mar-1998
C;Accession: A01540; A60312; A91781; B32614; A28064
R;Thim, L.; Moody, A.J.
Regul. Pept. 2, 139-150, 1981
A;Title: The primary structure of porcine glicentin (proglucagon).
A;Reference number: A94233; MUID:81248172
A;Accession: A01540
A;Molecule type: protein
A;Residues: 1-69 <TH1>
R;Thim, L.; Moody, A.J.
Regul. Pept. Suppl. 2, S33, 1983
A;Title: Primary structure of a possible porcine proglucagon fragment.
A;Reference number: A60312
A;Accession: A60312
A;Molecule type: protein
A;Residues: 1-30 <TH2>
A;Note: this peptide is co-secreted with glucagon from the pancreas
R;Bromer, W.W.; Sinn, L.G.; Behrens, O.K.
J. Am. Chem. Soc. 79, 2807-2810, 1957
A;Title: The amino acid sequence of glucagon. V. Location of amide groups, acid degra
A;Reference number: A91781
A;Accession: A91781
A;Molecule type: protein
A;Residues: 33-61 <BRO>
R;Orskov, C.; Bersani, M.; Johnsen, A.H.; Hojrup, P.; Holst, J.J.
J. Biol. Chem. 264, 12826-12829, 1989
A;Title: Complete sequences of glucagon-like peptide-1 from human and pig small intes
A;Reference number: A92732; MUID:89327238
A;Accession: B32614
A;Molecule type: protein
A;Residues: 78-107 <ORS>
R;Buhl, T.; Thim, L.; Kofod, H.; Orskov, C.; Harling, H.; Holst, J.J.
J. Biol. Chem. 263, 8621-8624, 1988
A;Title: Naturally occurring products of proglucagon 111-160 in the porcine and human
A;Reference number: A28064; MUID:88243712
A;Accession: A28064
A;Molecule type: protein
A;Residues: 111-158 <BUH>
C;Comment: X's represent missing amino acids, mostly basic, that are predicted to exi
C;Superfamily: glucagon
C;Keywords: amidated carboxyl end; carbohydrate metabolism; duplication; hormone; int
F;1-69/Product: glucagon-69 #status experimental <G69>
F;1-30/Region: glicentin-related peptide #status experimental
F;33-69/Product: glucagon-37 #status predicted <G37>
F;33-61/Product: glucagon #status experimental <GCN>
F;78-107/Product: glucagon-like peptide 1 #status experimental <GL1>

F;126-158/Product: glucagon-like peptide 2 #status experimental <GL2>
F;107/Modified site: amidated carboxyl end (Arg) (amide in mature form from following gl

Query Match 98.7%; Score 153; DB 1; Length 158;
Best Local Similarity 96.7%; Pred. No. 1.8e-14;
Matches 29; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
||||||||||||||||||||||:|||||||
Db 78 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 107

RESULT 2
GCHU
glucagon precursor [validated] - human
N;Contains: glicentin; glicentin-related polypeptide (GRPP); glucagon; glucagon-like pep
ke peptide 1 (tGLP1)
C;Species: Homo sapiens (man)
C;Date: 24-Apr-1984 #sequence_revision 31-Mar-1993 #text_change 08-Dec-2000
C;Accession: A24377; A44197; A30875; A32614; A01541; S23309
R;White, J.W.; Saunders, G.F.
Nucleic Acids Res. 14, 4719-4730, 1986
A;Title: Structure of the human glucagon gene.
A;Reference number: A24377; MUID:86259053
A;Accession: A24377
A;Molecule type: DNA
A;Residues: 1-180 <WHI>
A;Cross-references: GB:X03991
R;Bell, G.I.; Sanchez-Pescador, R.; Laybourn, P.J.; Najarian, R.C.
Nature 304, 368-371, 1983
A;Title: Exon duplication and divergence in the human preproglucagon gene.
A;Reference number: A44197; MUID:83271477
A;Accession: A44197
A;Molecule type: DNA
A;Residues: 1-179 <BEL>
A;Cross-references: GB:V01515; NID:g31777; PIDN:CAA24759.1; PID:g31778
R;Drucker, D.J.; Asa, S.
J. Biol. Chem. 263, 13475-13478, 1988
A;Title: Glucagon gene expression in vertebrate brain.
A;Reference number: A30875; MUID:88330860
A;Accession: A30875
A;Molecule type: mRNA
A;Residues: 1-180 <DRU>
A;Cross-references: GB:J04040; NID:g183269; PIDN:AAA52567.1; PID:g183270
R;Orskov, C.; Bersani, M.; Johnsen, A.H.; Hojrup, P.; Holst, J.J.
J. Biol. Chem. 264, 12826-12829, 1989
A;Title: Complete sequences of glucagon-like peptide-1 from human and pig small intestin
A;Reference number: A92732; MUID:89327238
A;Accession: A32614
A;Molecule type: protein
A;Residues: 98-127 <ORS>
R;Thomsen, J.; Kristiansen, K.; Brunfeldt, K.; Sundby, F.
FEBS Lett. 21, 315-319, 1972
A;Title: The amino acid sequence of human glucagon.
A;Reference number: A91373
A;Accession: A01541
A;Molecule type: protein
A;Residues: 53-81 <THO>
R;Tsugita, A.; Takamoto, K.; Kamo, M.; Iwadate, H.
Eur. J. Biochem. 206, 691-696, 1992
A;Title: C-terminal sequencing of protein. A novel partial acid hydrolysis and analysis
A;Reference number: S23188; MUID:92298996
A;Accession: S23309
A;Molecule type: protein
A;Residues: 53-81 <TSU>
C;Comment: In pancreatic alpha-cells, proglucagon is processed to glicentin-related poly
stinal L cells, proglucagon is processed to truncated glucagon-like peptide 1, glucagon-
dulin.
C;Genetics:
A;Gene: GDB:GCG
A;Cross-references: GDB:119265; OMIM:138030
A;Map position: 2q36-2q37
A;Introns: 31/2; 85/2; 131/2; 179/2
C;Superfamily: glucagon
C;Keywords: amidated carboxyl end; carbohydrate metabolism; duplication; hormone; int
F;1-20/Domain: signal sequence #status predicted <SIG>
F;21-180/Product: proglucagon #status experimental <PGC>
F;21-89/Product: glicentin #status experimental <GLN>
F;21-50/Product: glicentin-related polypeptide #status predicted <GRPP>
F;53-89/Product: oxyntomodulin #status experimental <OXN>
F;53-81/Product: glucagon #status experimental <GCN>
F;92-178/Product: major proglucagon fragment #status experimental <MPGF>
F;92-127/Product: glucagon-like peptide 1 #status experimental <GL1>
F;98-127/Product: truncated glucagon-like peptide 1 #status experimental <TGL>
F;146-178/Product: glucagon-like peptide 2 #status predicted <GL2>
F;127/Modified site: amidated carboxyl end (Arg) (amide in mature form from following

Query Match 98.7%; Score 153; DB 1; Length 180;
Best Local Similarity 96.7%; Pred. No. 2.1e-14;
Matches 29; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
||||||||||||||||||||||:|||||||
Db 98 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 127

RESULT 3
GCGP
glucagon precursor - guinea pig
N;Alternate names: oxyntomodulin
N;Contains: glicentin-related peptide; glucagon; glucagon-37 (oxyntomodulin); glucago
C;Species: Cavia porcellus (guinea pig)
C;Date: 30-Sep-1987 #sequence_revision 31-Dec-1992 #text_change 16-Jun-2000
C;Accession: A24856; A23849; A60323
R;Seino, S.; Welsh, M.; Bell, G.I.; Chan, S.J.; Steiner, D.F.
FEBS Lett. 203, 25-30, 1986
A;Title: Mutations in the guinea pig preproglucagon gene are restricted to a specific
A;Reference number: A24856; MUID:86248118
A;Accession: A24856
A;Molecule type: mRNA
A;Residues: 1-180 <SEI>
A;Cross-references: DDBJ:D00014; GB:N00014; NID:g220288; PIDN:BAA00010.1; PID:g220289
R;Huang, C.G.; Eng, J.; Pan, Y.C.E.; Hulmes, J.D.; Yalow, R.S.
Diabetes 35, 508-512, 1986
A;Title: Guinea pig glucagon differs from other mammalian glucagons.
A;Reference number: A23849; MUID:86165412
A;Accession: A23849
A;Molecule type: protein
A;Residues: 53-81 <HUA>
R;Conlon, J.M.; Hansen, H.F.; Schwartz, T.W.
Regul. Pept. 11, 309-320, 1985
A;Title: Primary structure of glucagon and a partial sequence of oxyntomodulin (gluca
A;Reference number: A60323; MUID:86017849
A;Accession: A60323
A;Molecule type: protein
A;Residues: 53-81 <CON>
A;Note: glucagon-37 was not completely sequenced
C;Superfamily: glucagon
C;Keywords: amidated carboxyl end; carbohydrate metabolism; duplication; hormone; pan
F;1-20/Domain: signal sequence #status predicted <SIG>
F;21-180/Product: proglucagon #status predicted <PGC>
F;21-50/Region: glicentin-related peptide #status predicted
F;53-89/Product: glucagon-37 (oxyntomodulin) #status experimental <G37>
F;53-81/Product: glucagon #status experimental <GCN>
F;98-127/Product: glucagon-like peptide 1 #status predicted <GL1>
F;146-178/Product: glucagon-like peptide 2 #status predicted <GL2>
F;127/Modified site: amidated carboxyl end (Arg) (amide in mature form from following

Query Match 98.7%; Score 153; DB 1; Length 180;
Best Local Similarity 96.7%; Pred. No. 2.1e-14;
Matches 29; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30

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          ||||||||||||||||||||||:|||||||
Db      98 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 127


RESULT   4
GCRTDU
glucagon precursor - degu
N;Contains: glicentin-related peptide; glucagon; glucagon-like peptide 1; glucagon-like
C;Species: Octodon degus (degu)
C;Date: 31-Mar-1993 #sequence_revision 31-Mar-1993 #text_change 18-Jun-1999
C;Accession: C36118
R;Nishi, M.; Steiner, D.F.
Mol. Endocrinol. 4, 1192-1198, 1990
A;Title: Cloning of complementary DNAs encoding islet amyloid polypeptide, insulin, and
A;Reference number: A36118; MUID:91155952
A;Accession: C36118
A;Molecule type: mRNA
A;Residues: 1-180 <NIS>
A;Cross-references: GB:M57688; NID:g202467; PIDN:AAA40588.1; PID:g202468
C;Superfamily: glucagon
C;Keywords: amidated carboxyl end; carbohydrate metabolism; duplication; hormone; pancre
F;1-20/Domain: signal sequence #status predicted <SIG>
F;21-180/Product: proglucagon #status predicted <PGC>
F;21-50/Region: glicentin-related peptide #status predicted
F;53-81/Product: glucagon #status predicted <GCN>
F;98-127/Product: glucagon-like peptide 1 #status predicted <GL1>
F;146-178/Product: glucagon-like peptide 2 #status predicted <GL2>
F;127/Modified site: amidated carboxyl end (Arg) (amide in mature form from following gl


  Query Match             98.7%;  Score 153;  DB 1;  Length 180;
  Best Local Similarity   96.7%;  Pred. No. 2.1e-14;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           ||||||||||||||||||||||:|||||||
Db      98 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 127


RESULT   5
GCRT
glucagon precursor - rat
N;Contains: glicentin-related peptide; glucagon; glucagon-like peptide 1; glucagon-like
C;Species: Rattus norvegicus (Norway rat)
C;Date: 30-Sep-1987 #sequence_revision 30-Sep-1987 #text_change 26-Feb-1999
C;Accession: A22655; A25190; A44198
R;Heinrich, G.; Gros, P.; Habener, J.F.
J. Biol. Chem. 259, 14082-14087, 1984
A;Title: Glucagon gene sequence: four of six exons encode separate functional domains of
A;Reference number: A22655; MUID:85054853
A;Accession: A22655
A;Molecule type: DNA
A;Residues: 1-180 <HEI>
A;Cross-references: EMBL:K02809
A;Note: the authors translated the codon TTG for residue 10 as Glu and ACC for residue 5
R;Mojsov, S.; Heinrich, G.; Wilson, I.B.; Ravazzola, M.; Orci, L.; Habener, J.F.
J. Biol. Chem. 261, 11880-11889, 1986
A;Title: Preproglucagon gene expression in pancreas and intestine diversifies at the lev
A;Reference number: A25190; MUID:86304324
A;Accession: A25190
A;Status: not compared with conceptual translation
A;Molecule type: mRNA
A;Residues: 1-180 <MOJ>
R;Heinrich, G.; Gros, P.; Lund, P.K.; Bentley, R.C.; Habener, J.F.
Endocrinology 115, 2176-2181, 1984
A;Title: Pre-proglucagon messenger ribonucleic acid: nucleotide and encoded amino acid s
A;Reference number: A44198; MUID:85051023
A;Accession: A44198
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-180 <HE2>
A;Cross-references: GB:K02809; GB:K02810; GB:K02811; GB:K02812
C;Genetics:
A;Introns: 31/2; 85/2; 131/2; 179/2
C;Superfamily: glucagon
C;Keywords: amidated carboxyl end; carbohydrate metabolism; duplication; hormone; pan
F;1-20/Domain: signal sequence #status predicted <SIG>
F;21-180/Product: proglucagon #status predicted <PGC>
F;21-50/Region: glicentin-related peptide #status predicted
F;53-81/Product: glucagon #status predicted <GCN>
F;98-127/Product: glucagon-like peptide 1 #status predicted <GL1>
F;146-180/Product: glucagon-like peptide 2 #status predicted <GL2>
F;127/Modified site: amidated carboxyl end (Arg) (amide in mature form from following


  Query Match             98.7%;  Score 153;  DB 1;  Length 180;
  Best Local Similarity   96.7%;  Pred. No. 2.1e-14;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           ||||||||||||||||||||||:|||||||
Db      98 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 127


RESULT   6
GCHY
glucagon precursor - golden hamster
N;Contains: glicentin-related peptide; glucagon; glucagon-like peptide 1; glucagon-li
C;Species: Mesocricetus auratus (golden hamster)
C;Date: 13-Jun-1983 #sequence_revision 13-Jun-1983 #text_change 20-Mar-1998
C;Accession: A01539
R;Bell, G.I.; Santerre, R.F.; Mullenbach, G.T.
Nature 302, 716-718, 1983
A;Title: Hamster preproglucagon contains the sequence of glucagon and two related pep
A;Reference number: A01539; MUID:83167563
A;Accession: A01539
A;Molecule type: mRNA
A;Residues: 1-180 <BEL>
A;Cross-references: EMBL:J00059
C;Superfamily: glucagon
C;Keywords: amidated carboxyl end; carbohydrate metabolism; duplication; hormone; pan
F;1-20/Domain: signal sequence #status predicted <SIG>
F;21-180/Product: proglucagon #status predicted <PGC>
F;21-50/Region: glicentin-related peptide #status predicted
F;53-81/Product: glucagon #status predicted <GCN>
F;98-127/Product: glucagon-like peptide 1 #status predicted <GL1>
F;146-180/Product: glucagon-like peptide 2 #status predicted <GL2>
F;127/Modified site: amidated carboxyl end (Arg) (amide in mature form from following


  Query Match             98.7%;  Score 153;  DB 1;  Length 180;
  Best Local Similarity   96.7%;  Pred. No. 2.1e-14;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           ||||||||||||||||||||||:|||||||
Db      98 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 127


RESULT   7
GCBO
glucagon precursor - bovine
N;Contains: glicentin-related peptide; glucagon; glucagon-like peptide 1; glucagon-li
C;Species: Bos primigenius taurus (cattle)
C;Date: 14-Nov-1983 #sequence_revision 14-Nov-1983 #text_change 20-Mar-1998
C;Accession: A93970; A92081; A01538
R;Lopez, L.C.; Frazier, M.L.; Su, C.J.; Kumar, A.; Saunders, G.F.
Proc. Natl. Acad. Sci. U.S.A. 80, 5485-5489, 1983
A;Title: Mammalian pancreatic preproglucagon contains three glucagon-related peptides
A;Reference number: A93970; MUID:83299996
A;Accession: A93970
A;Molecule type: mRNA
A;Residues: 1-180 <LOP>
A;Cross-references: EMBL:K00107
R;Bromer, W.W.; Boucher, M.E.; Koffenberger Jr., J.E.
J. Biol. Chem. 246, 2822-2827, 1971
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A;Title: Amino acid sequence of bovine glucagon.
A;Reference number: A92081; MUID:71166445
A;Accession: A92081
A;Molecule type: protein
A;Residues: 53-81 <BRO>
C;Superfamily: glucagon
C;Keywords: amidated carboxyl end; carbohydrate metabolism; duplication; hormone; pancre
F;1-20/Domain: signal sequence #status predicted <SIG>
F;21-180/Product: proglucagon #status predicted <PGC>
F;21-50/Region: glicentin-related peptide #status predicted
F;53-81/Product: glucagon #status experimental <GCN>
F;98-127/Product: glucagon-like peptide 1 #status experimental <GL1>
F;146-178/Product: glucagon-like peptide 2 #status predicted <GL2>
F;127/Modified site: amidated carboxyl end (Arg) (amide in mature form from following gl


  Query Match             98.7%;  Score 153;  DB 1;  Length 180;
  Best Local Similarity   96.7%;  Pred. No. 2.1e-14;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
          |||||||||||||||||||||||:|||||||
Db     98 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 127


RESULT   8
A57294
glucagon precursor - mouse
C;Species: Mus musculus (house mouse)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 16-Jul-1999
C;Accession: A57294; S49903
R;Rothenberg, M.E.; Eilertson, C.D.; Klein, K.; Zhou, Y.; Lindberg, I.; McDonald, J.K.;
J. Biol. Chem. 270, 10136-10146, 1995
A;Title: Processing of mouse proglucagon by recombinant prohormone convertase 1 and immu
A;Reference number: A57294; MUID:95247722
A;Accession: A57294
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-180 <ROT>
A;Cross-references: EMBL:Z46845; NID:g599880; PIDN:CAA86902.1; PID:g599881
C;Superfamily: glucagon
C;Keywords: carbohydrate metabolism; duplication; hormone; pancreas


  Query Match             98.7%;  Score 153;  DB 2;  Length 180;
  Best Local Similarity   96.7%;  Pred. No. 2.1e-14;
  Matches   29;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
          |||||||||||||||||||||||:|||||||
Db     98 HAEGTFTSDVSSYLEGQAAKEFIAWLVKGR 127


RESULT   9
GCCH
glucagon precursor - chicken
N;Contains: glucagon; glucagon-like peptide 1
C;Species: Gallus gallus (chicken)
C;Date: 31-Dec-1991 #sequence_revision 31-Mar-1993 #text_change 18-Jun-1999
C;Accession: S09992; A92189; A60836; A01542
R;Hasegawa, S.; Terazono, K.; Nata, K.; Takada, T.; Yamamoto, H.; Okamoto, H.
FEBS Lett. 264, 117-120, 1990
A;Title: Nucleotide sequence determination of chicken glucagon precursor cDNA. Chicken p
A;Reference number: S09992; MUID:90249492
A;Accession: S09992
A;Molecule type: mRNA
A;Residues: 1-151 <HAS>
A;Cross-references: EMBL:Y07539; NID:g63749; PIDN:CAA68827.1; PID:g63750
R;Pollock, H.G.; Kimmel, J.R.
J. Biol. Chem. 250, 9377-9380, 1975
A;Title: Chicken glucagon. Isolation and amino acid sequence studies.
A;Reference number: A92189; MUID:76069271
A;Accession: A92189
A;Molecule type: protein
A;Residues: 55-83 <POL>
R;Huang, J.; Eng, J.; Yalow, R.S.
Horm. Metab. Res. 19, 542-544, 1987
A;Title: Chicken glucagon: sequence and potency in receptor assay.
A;Reference number: A60836; MUID:88113418
A;Accession: A60836
A;Molecule type: protein
A;Residues: 55-83 <HUA>
C;Superfamily: glucagon
C;Keywords: amidated carboxyl end; carbohydrate metabolism; duplication; hormone; pan
F;1-22/Domain: signal sequence #status predicted <SIG>
F;23-151/Product: proglucagon #status predicted <PGC>
F;55-83/Product: glucagon #status experimental <GCN>
F;118-147/Product: glucagon-like peptide 1 #status predicted <GL1>
F;147/Modified site: amidated carboxyl end (Arg) (amide in mature form from following


  Query Match             91.0%;  Score 141;  DB 1;  Length 151;
  Best Local Similarity   83.3%;  Pred. No. 9.1e-13;
  Matches   25;  Conservative    4;  Mismatches    1;  Indels    0;  Gaps    0;

Qy      1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
          |||||:|||::||||||||||||:|||| ||
Db    118 HAEGTYTSDITSYLEGQAAKEFIAWLVNGR 147


RESULT  10
I51301
proglucagon - chicken
C;Species: Gallus gallus (chicken)
C;Date: 13-Sep-1996 #sequence_revision 13-Sep-1996 #text_change 16-Jul-1999
C;Accession: I51301
R;Irwin, D.M.; Wong, J.
Mol. Endocrinol. 9, 267-277, 1995
A;Title: Trout and chicken proglucagon: alternative splicing generates mRNA transcrip
A;Reference number: A55895; MUID:95295739
A;Accession: I51301
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-206 <IRW>
A;Cross-references: GB:S78477; NID:g999386; PIDN:AAB34506.1; PID:g999387
C;Superfamily: glucagon
C;Keywords: duplication


  Query Match             91.0%;  Score 141;  DB 2;  Length 206;
  Best Local Similarity   83.3%;  Pred. No. 1.3e-12;
  Matches   25;  Conservative    4;  Mismatches    1;  Indels    0;  Gaps    0;

Qy      1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
          |||||:|||::||||||||||||:|||| ||
Db    118 HAEGTYTSDITSYLEGQAAKEFIAWLVNGR 147


RESULT  11
GCFGB
glucagon precursor - bullfrog (fragments)
N;Alternate names: oxyntomodulin
N;Contains: glucagon; glucagon-36 (oxyntomodulin); glucagon-like peptide 1; glucagon-
C;Species: Rana catesbeiana (bullfrog)
C;Date: 31-Mar-1993 #sequence_revision 31-Mar-1993 #text_change 20-Mar-1998
C;Accession: B28091; C28091; D28091
R;Pollock, H.G.; Hamilton, J.W.; Rouse, J.B.; Ebner, K.E.; Rawitch, A.B.
J. Biol. Chem. 263, 9746-9751, 1988
A;Title: Isolation of peptide hormones from the pancreas of the bullfrog (Rana catesb
A;Reference number: A92730; MUID:88257102
A;Accession: B28091
A;Molecule type: protein
A;Residues: 1-36 <PO2>
A;Accession: C28091
A;Molecule type: protein
A;Residues: 37-68 <POL>
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A;Accession: D28091
A;Molecule type: protein
A;Residues: 69-101 <PO3>
C;Superfamily: glucagon
C;Keywords: carbohydrate metabolism; duplication; hormone; pancreas
F;1-36/Product: glucagon-36 (oxyntomodulin) #status experimental <G36>
F;1-29/Product: glucagon #status predicted <GCN>
F;37-67/Product: glucagon-like peptide 1 #status experimental <GL1>
F;69-101/Product: glucagon-like peptide 2 #status experimental <GL2>


  Query Match             81.9%;  Score 127;  DB 1;  Length 101;
  Best Local Similarity   76.7%;  Pred. No. 6e-11;
  Matches   23;  Conservative    5;  Mismatches    2;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           ||:||||||:||||| :||||: ||:|||
Db      37 HADGTFTSDMSSYLEEKAAKEFVDWLIKGR 66


RESULT  12
B61125
glucagon-like peptide - American eel
C;Species: Anguilla rostrata (American eel)
C;Date: 10-Mar-1994 #sequence_revision 10-Mar-1994 #text_change 21-Nov-1997
C;Accession: B61125
R;Conlon, J.M.; Andrews, P.C.; Thim, L.; Moon, T.W.
Gen. Comp. Endocrinol. 82, 23-32, 1991
A;Title: The primary structure of glucagon-like peptide but not insulin has been conserv
A;Reference number: A61125; MUID:91340068
A;Accession: B61125
A;Molecule type: protein
A;Residues: 1-30 <CON>
C;Superfamily: glucagon
C;Keywords: amidated carboxyl end; duplication
F;1-30/Product: glucagon-like peptide #status experimental <GLP>
F;30/Modified site: amidated carboxyl end (Arg) #status predicted


  Query Match             80.0%;  Score 124;  DB 2;  Length 30;
  Best Local Similarity   76.7%;  Pred. No. 4.4e-11;
  Matches   23;  Conservative    4;  Mismatches    3;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           |||||:||||||||: ||||||::||  ||
Db       1 HAEGTYTSDVSSYLQDQAAKEFVSWLKTGR 30


RESULT  13
C61125
glucagon-like peptide - European eel
C;Species: Anguilla anguilla (European eel)
C;Date: 10-Mar-1994 #sequence_revision 10-Mar-1994 #text_change 21-Nov-1997
C;Accession: C61125
R;Conlon, J.M.; Andrews, P.C.; Thim, L.; Moon, T.W.
Gen. Comp. Endocrinol. 82, 23-32, 1991
A;Title: The primary structure of glucagon-like peptide but not insulin has been conserv
A;Reference number: A61125; MUID:91340068
A;Accession: C61125
A;Molecule type: protein
A;Residues: 1-30 <CON>
C;Superfamily: glucagon
C;Keywords: amidated carboxyl end; duplication
F;1-30/Product: glucagon-like peptide #status experimental <GLP>
F;30/Modified site: amidated carboxyl end (Arg) #status experimental


  Query Match             80.0%;  Score 124;  DB 2;  Length 30;
  Best Local Similarity   76.7%;  Pred. No. 4.4e-11;
  Matches   23;  Conservative    4;  Mismatches    3;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           |||||:||||||||: ||||||::||  ||
Db       1 HAEGTYTSDVSSYLQDQAAKEFVSWLKTGR 30


RESULT  14
GCAF2
glucagon 2 precursor - American goosefish
N;Contains: glucagon; glucagon-like peptide 1
C;Species: Lophius americanus (American goosefish)
C;Date: 31-Mar-1993 #sequence_revision 31-Mar-1993 #text_change 21-Jul-2000
C;Accession: A05150
R;Lund, P.K.; Goodman, R.H.; Montminy, M.R.; Dee, P.C.; Habener, J.F.
J. Biol. Chem. 258, 3280-3284, 1983
A;Title: Anglerfish islet pre-proglucagon II. Nucleotide and corresponding amino acid
A;Reference number: A05150; MUID:83135785
A;Accession: A05150
A;Molecule type: mRNA
A;Residues: 1-122 <LUN>
A;Cross-references: GB:J00933; NID:g64021; PIDN:CAA23905.1; PID:g64022
C;Superfamily: glucagon
C;Keywords: carbohydrate metabolism; duplication; hormone; pancreas
F;1-21/Domain: signal sequence #status predicted <SIG>
F;22-122/Product: proglucagon 2 #status predicted <PGC2>
F;52-80/Product: glucagon #status predicted <GCN>
F;89-119/Product: glucagon-like peptide 1 #status predicted <GL1>


  Query Match             76.1%;  Score 118;  DB 1;  Length 122;
  Best Local Similarity   70.0%;  Pred. No. 1.4e-09;
  Matches   21;  Conservative    6;  Mismatches    3;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           ||:||:||||||||: ||||:|::||  ||
Db      89 HADGTYTSDVSSYLQDQAAKDFVSWLKAGR 118


RESULT  15
I51093
glucagon - chinook salmon (fragment)
C;Species: Oncorhynchus tschawytscha (chinook salmon)
C;Date: 13-Sep-1996 #sequence_revision 13-Sep-1996 #text_change 16-Jul-1999
C;Accession: I51093
R;Irwin, D.M.; Wong, J.
Mol. Endocrinol. 9, 267-277, 1995
A;Title: Trout and chicken proglucagon: alternative splicing generates mRNA transcrip
A;Reference number: A55895; MUID:95295739
A;Accession: I51093
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-66 <IRW>
A;Cross-references: EMBL:U19920; NID:g736366; PIDN:AAC59670.1; PID:g736367
C;Superfamily: glucagon
C;Keywords: duplication


  Query Match             74.8%;  Score 116;  DB 2;  Length 66;
  Best Local Similarity   66.7%;  Pred. No. 1.4e-09;
  Matches   20;  Conservative    7;  Mismatches    3;  Indels    0;  Gaps    0;

Qy       1 HAEGTFTSDVSSYLEGQAAKEFLAWLVKGR 30
           ||:||:||||||:||: ||||:|::||  ||
Db      33 HADGTYTSDVSTYLQDQAAKDFVSWLKSGR 62


Search completed: August 7, 2002, 09:18:27
Job time: 191 sec
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